



Protecting local  
communities

# Becoming a Retained Firefighter

This booklet has been designed as a guide to becoming a Retained Firefighter and describes what it means to be a Retained Firefighter and the recruitment and selection process involved so that you are fully prepared

**September 2017**



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## The Role of a Retained Firefighter

Retained Firefighters are members of the community who are paid to provide an on-call service responding to emergency calls in the same way as Wholetime Firefighters, using the same appliances and equipment. The difference is they would be 'on call' in their home rather than at a fire station.

Retained Firefighters have to live and be able to respond and arrive **within five minutes** of the station. They respond via a pager system and need to turn out within five minutes during their hours of declared availability.

Retained Firefighters can come from any background – cooks, factory workers, farmers, care workers, students or stay at home parents, they're doing everyday jobs until the call comes and then quite literally they put on their other hat and become a professional Firefighter.

The Fire & Rescue Service employs males and females from a range of diverse ethnic backgrounds. We regard ourselves as an employer that promotes equality and values diversity and we welcome applicants from a diverse range of backgrounds to join us. You have to be at least 18 years of age with a good all round level of fitness. You also need to be able to reflect the Brigades values at all times and just as important you need qualities such as common sense, commitment and enthusiasm.

No previous experience is required due to the comprehensive training programme on offer.

This is a chance for you to take on a vital role on behalf of your local community without having to change the way you live or work.

### **What will you get out of it?**

Firefighting is not like any other job. It can be unpredictable, exciting and rewarding coupled with the satisfaction and respect that comes with providing a crucial service to your local community. There is no denying that it is a tough but rewarding job.

You will learn new skills such as first aid, road traffic collision procedures and fire safety. As a retained firefighter you will receive an annual 'retainer' payment plus hourly rates paid when you attend incidents or training as well as disturbance fees.

## Retained Firefighter Job Description

<b>Role Title:</b>	Firefighter	<b>Reporting To:</b>	Crew Manager
<b>Location:</b>	Various Brigade sites	<b>Role/Grade:</b>	Firefighter
<b>Overall Purpose of Role:</b>	To save life, protect property, render humanitarian services and to protect the environment from damage		
<b>Key Responsibilities</b>			
<ol style="list-style-type: none"> <li>1. Create and maintain a good working relationship with colleagues and contribute to decision making for the effectiveness of the team</li> <li>2. Comply with all Service policy, guiding frameworks and legal requirements</li> <li>3. Contribute to the Health and Safety of self and others at work</li> <li>4. Take part in Personal Development Reviews</li> <li>5. Take responsibility for personal performance and attend development programmes to support development as required to meet organisational objectives</li> <li>6. Maintain competence against the National Occupational Standards for the role</li> <li>7. Demonstrate ownership of personal development by maintaining accurate personal development records to support evaluation of own practice</li> <li>8. Support personnel to the required standard as required which may include any specialist activities eg First Aid and/or specialist appliances or equipment</li> <li>9. Monitor, test and record equipment and resources to maintain operational readiness and to update all related records, which will include completion of defect notes, computerised records and any other records</li> <li>10. Undertake Community Fire Safety and Fire Safety visits and carry out local and Brigade initiatives as requested</li> <li>11. Attend operational incidents as part of a team in accordance with Brigade policy</li> <li>12. Liaise with key agencies both at incidents and through Community Safety initiatives</li> <li>13. Support managers in the efficient running of the station</li> <li>14. Contribute to projects as identified through the Brigade Plan and provide reports as required</li> <li>15. Take part in Personal Development Reviews and complete Personal Development Records in accordance with Brigade procedure.</li> <li>16. Maintain relevant skills and knowledge aligned to key responsibilities and National Occupational Standards to determine continued maintenance of competence in role</li> <li>17. Support and promote equality and diversity, respect and dignity for all staff and members of our local communities in line with Brigade policy.</li> <li>18. Carry out all duties as detailed in the Brigade's Health &amp; Safety Policy</li> </ol>			

<b>Rolemap of National Occupational Standards</b>	<b>NOS</b>	<b>Modules</b>
Inform & educate your community to improve awareness of safety matters	FF1	004 to 007
Take responsibility for effective performance	FF2	026, 048
Save and preserve endangered life	FF3	056 to 064
Resolve operational incidents	FF4	070, 074
Protect the environment from the effects of hazardous materials	FF5	
Support effectiveness of operational response	FF6	
Support development of colleagues in the workplace	FF7	
Contribute to Fire Safety solutions to minimise risks to your community	FF8	
Drive, manoeuvre and redeploy Fire Service vehicles	FF9	

### **CFB Vision**

**Our vision for 2018 is that we have built a sustainable future and:**

- **make a positive difference to the safety and quality of life of every local citizen; and the places where they live and work**
- **deliver services by people who are professional, proud and passionate**
- **are nationally recognised as being high performing and innovative; and internationally renowned for being able to reduce risk in business, industry and the home**

### **CFB Values**

**Protect** - putting safety first. Protect ourselves, the community, the organisation and the environment from all avoidable harm.

**Respect** - respect ourselves; our colleagues; our community; our heritage; our property; our organisation and our environment.

**Improvement through learning** - learning from our own and others experiences to continuously improve service delivery.

**Demonstrate efficiency** - doing the right things well by maximising the use of resources, being financially prudent and achieving continuous improvement.

**Engagement** - understand and engage our communities in order to provide the most appropriate range of services to significantly contribute to improving their quality of life.

### **Strategic Goals**

- 1. Safer Communities**
- 2. Organisational Excellence**

### **Personal Qualities and Attributes (PQA's)**

**Commitment to Diversity and Integrity** - Understands and respects diversity and adopts a fair and ethical approach to others

**Openness to Change** - Is open to change and actively seeks to support it

**Confidence and Resilience** - Maintains a confident and resilient attitude in highly challenging situations

**Working with others** - Works effectively with others both within the Fire and Rescue Service and in the community

**Effective communication** - Communicates effectively, both orally and in writing

**Commitment to Development** - Committed and able to develop self and others

**Problem Solving** - Understands, recalls, applies and adapts relevant information in an organised, safe and systematic way

**Situational Awareness** - Maintains an active awareness of the environment to promote safe and effective working

**Commitment to Excellence** - Adopts a conscientious and proactive approach to work to achieve and maintain excellent standards

## Current Terms & Conditions

### **Obligations**

We appreciate that asking somebody to commit to providing full cover (168 hours) per week is an unrealistic target, especially when you may have other employment commitments, therefore we class 120 hours per week as full cover. For many people this is still difficult to achieve therefore employment is based on you being able to provide cover for up to 75% of the 120 hours per week Monday to Sunday in accordance with the requirements of the station. Within this period however you are required to be available for call-out at least half of the period covered by the hours 9am to 5pm Monday to Friday.

You are also required to attend a 3 hour Drill Night (6pm to 9pm) once a week for training, development and maintenance duties. Understandably, sometimes primary employment commitments may prevent you attending every drill night, in which case, with the agreement of your line manager, you will make up the 3 hours at some other time during the week.

### **In return for your commitment and enthusiasm we can offer you:**

#### **Payment**

All remuneration is paid in accordance with the National Joint Council (NJC) Conditions of Service for Local Authorities Fire Brigades.

- **Fixed Fees**

You will receive a retaining fee of 75%; this is paid monthly in arrears on the 15<sup>th</sup> of every month. The Brigade does have arrangements in place that anyone who at 31<sup>st</sup> December in any given year who has provided weekly availability of not less than 120 hours per week for the period 1st January-31st December for that year will receive a payment to the maximum of 100% of the retaining fee applicable to the employees role.

- **Variable Fees**

You will receive the hourly rate of pay for attending the weekly drill nights.

When responding to an emergency you will receive a minimum of one hours pay where you form part of the crew responding and a minimum of half an hours pay where you do not form part of that crew.

When called out on an emergency you will receive a fixed disturbance allowance on each occasion in addition to the hourly rate.

The table below shows the current rates of pay:

ROLE	ANNUAL RETAINING FEE £	BASIC HOURLY £	DISTURBANCE £
Trainee	2,224.00 (75%)	10.15	3.90
Development	2,316.00 (75%)	10.58	3.90
Competent	2,964.00 (75%)	13.53	3.90

### Holidays

You will receive 4 weeks annual leave per year (rising to 5 weeks after 5 years service).

### Pension

You will automatically become a member of the Firefighters Pension Scheme 2015, further details on the scheme will be provided on appointment.

### Training

The Brigade will equip you with all of the necessary skills needed for you to undertake the role and you will receive further training throughout your career to ensure that you are kept up to date with the latest technology and equipment

***The brigade reserves the right to change terms and conditions associated with this duty system should the duty system develop or change in the future. All individuals will be notified in due course should the situation arise.***

## Recruitment Process



## Registration Form

You will be required to apply online by visiting <https://www.northeastjobs.org.uk> and clicking on Cleveland Fire Brigade where you will be able to complete the online registration form.

The online registration form is the first stage of the recruitment process. You must be successful at this stage in order to proceed to the next stage of the selection process.

The registration form is made up of the following sections:

1. **Eligibility Questions** - this will allow us to determine if you are eligible to apply for the role and will include details on your eligibility to work in the UK and your ability to meet the five minute attendance criteria
2. **Personal Details** – this will allow us to be able to correspond with you but will not be used as part of the selection process
3. **Employment History** – this will allow us to confirm your employment history over the last 3 years in order to comply with the HMG Baseline Personnel Security Standard (BPSS)
4. **References** – this will allow us to confirm your employment history over the last 3 years in order to comply with the HMG Baseline Personnel Security Standard (BPSS)
5. **Disability / Conviction Declaration** – this will allow us to make any necessary reasonable adjustments to the recruitment process
6. **Equal Opportunities Monitoring Information** – this information will not be used as part of the selection process. It is for monitoring purposes only.

In order for your application to proceed you must ensure that each section is completed in full.

### **Please remember**

- Read through your completed registration form carefully to ensure you have not missed anything out and that it is clearly and accurately presented. The decision to invite you to the next stage will be based on the information you give us on this form.
- Failure to provide accurate and complete information may result in your application being rejected.

## Online Psychometric Assessments

The online psychometric assessments are the second stage of the recruitment process. You must be successful at this stage in order to proceed to the next stage of the selection process. Please note, you must successfully complete one assessment before proceeding to the next and must pass all four assessments detailed below:

1. **Dependability & Safety Questionnaire** – This online assessment takes approximately ten minutes to complete and through a range of multiple choice questions, will determine whether a candidate is deemed to be safe and dependable. If you are successful at this assessment you will proceed to the UK Firefighter Talent Screener.
  
2. **UK Firefighter Talent Screener** – This online assessment takes approximately 30 minutes to complete and through a range of multiple choice questions, that have been developed by drawing upon the experiences of real firefighters, will assess how a candidate is likely to perform as a firefighter. It may also help you to understand more about what it might be like to work as a firefighter. If you are successful at this assessment you will proceed to the Verbal Reasoning & Calculation assessments.
  
3. **Verbal Reasoning & Calculation**
  - i. **Verbal Reasoning** – You will have 17 minutes to complete this online assessment which will assess your ability to understand and interpret written information
  - ii. **Calculation** – You will have 10 minutes to complete this online assessment which will assess your ability to quickly and accurately complete numerical calculations, similar to that you will commonly come across in this role.

If you are successful at both of these assessments you will proceed to the next stage of the recruitment process.

The assessments are administered online by SHL; you can find out more about these types of assessment and have a go at some practice questions by visiting <http://support.shl.com/candidate>.

## Role Related (Physical) Assessments

The Role Related test is the third stage of the recruitment process. You must be successful at this stage in order to proceed to the next stage of the selection process.

It is important that on the day of your assessment you arrive fit and well hydrated. Health and wellbeing is essential to the role of a Firefighter. You must keep well hydrated and drink at least 1.5 to 2 litres of fluid per day. You must make sure that you drink water before, during and after the tests.

You will be required to undertake and successfully complete all of the following role related (physical) tests in order to be deemed to have passed the Role Related assessment:

- Ladder Climb
- Casualty Evacuation
- Ladder Lift
- Enclosed Space
- Equipment Assembly
- Equipment Carry
- Ladder Extension
- Ladder Lift Manoeuvre & Carry Test

On the day, prior to commencement of tests, instructors will ensure that all applicants are given an explanation / demonstration as required.

All physical tests are performed in standard firefighter personal protective equipment which will be provided on the day, (helmet, jacket, trousers, gloves and boots) which together weigh 10kg. This will make the tests slightly more difficult than they first appear, as this additional weight will make movement more difficult.

### Ladder Climb

The ladder climb test assesses confidence to work at heights. You must ascend 2/3 of the way up the ladder and take a leg lock. When secure you will then be required to take your hands off the ladder lean back and look down and identify a word or number on a piece of paper held by the instructor below. This test is to be completed within an allocated time scale.



## Casualty Evacuation

The casualty evacuation requires you to walk backwards (you will be guided by a safety officer) around 3 sides of a 10m square whilst dragging a 55kg casualty. Although there are no simple exercises that directly simulate this event, the squat and seated row strength training exercises will help develop the specific muscles you need to successfully complete the casualty evacuation selection test within an allocated time.



## Ladder Lift

The ladder lift test simulates the individual physical demands of lifting the head of a 13.5m ladder back onto an appliance. A total load of 30kg, lifted to a height of 1.90m is required to successfully complete this test. The squat, seated row and particularly the shoulder press will help develop the specific muscles you need to successfully complete the ladder lift selection test.



## Enclosed Space

The enclosed space is a test of your ability to cope with dark/confined spaces and has only moderate physical demands, although good levels of flexibility and body awareness will be an advantage. Applicants will wear a Full Breathing Apparatus Set including a Breathing Apparatus Cylinder and a face mask. Applicants will then negotiate a crawl system with a clear vision visor. There will be limited light which will result in restricted vision while carrying out this test. Applicants will need to complete this exercise in a given amount of time.

NOTE: Applicants will not be breathing compressed air while participating but will be breathing through an open port in the face mask. A Safety Officer will provide assistance if necessary



## Equipment Assembly

The equipment assembly test is a timed test designed to test manual dexterity. You must assemble then disassemble a piece of equipment following a demonstration by the instructor. This test is to be completed within an allocated time scale.



## Equipment Carry

The equipment carry test is essentially a shuttle test that will test your levels of aerobic endurance, muscular strength and muscular endurance. It is designed to replicate some of the physical demands involved in the setting up of a water relay station to supply water to a grassland fire. A brief detail of the test is shown below. The test is performed back and forth along a 25m shuttle whilst wearing full fire-fighting protective clothing (which weighs ~10kg):



- Run out the hose reel for 25m
- Walk/Jog/Run back 25m
- Pick up and carry 2 x 70mm hose (each weigh 15kg) for 100m
- Hold 1 x 70mm hose at shoulder height and walk 25m
- Walk/Jog/Run back 75m
- Pick up and carry the 100mm suction hose and basket (total weight 12 kg) for 100m
- Walk/Jog/Run back 100m
- Pick up and carry the pump simulator (total weight 33kg)

The equipment carry test will challenge all aspects of your fitness (aerobic endurance, muscular endurance and muscular strength). Therefore, you must adopt a whole body approach to your training that develops these specific aspects of fitness. However, fartlek training for developing aerobic endurance and the static bar hold and/or hand grip exercises for developing muscular endurance (with the squash/ tennis ball) are particularly relevant in preparation for the equipment carry selection test.

## Ladder Extension

The ladder extending test simulates the individual physical demands of extending a ladder to its working height. The correct technique to be used will be hand over hand using an extending line to a simulated working height and then lowered hand over hand to show the ladder is under control at all times. This is required to successfully complete this test. The squat, seated row, lateral pull down and forearm/hand grip exercises will help develop the specific muscles you need to successfully complete the ladder extension selection test. This test is to be completed within an allocated time scale.



## Ladder Lift Manoeuvre & Carry

The ladder lift manoeuvre and carry test simulates the individual physical demands of lifting a 13.5m ladder as part of a team of four and moving it into a working position. A total load of 30kg, lifted and carried for a distance of 20metres; the first 10metres using one hand then change position (which will mean using the other hand for the return carry). The squat, seated row and lateral pull down and fore arm/hand grip exercises will help develop the specific muscles you need to successfully complete the ladder extension selection test.



## Competency Interview

The interview is the fourth stage of the recruitment process. You must be successful at this stage in order to proceed to the remaining stages of the selection process.

The interview process consists of:

- Panel of 2 interviewers
- Competency based PQA questions

The interview will be conducted with two people; one will ask you predetermined questions about your experience, the other will make thorough notes to ensure that a record is kept of all the examples you give which will then be used as part of the marking process.

Your interview may last up to 1 hour. Your interviewer will introduce him/herself to you and talk you through the procedure of the interview. From then on, the main aim of the interview is to gather information about you in relation to various Personal Qualities and Attributes (PQAs) that are required as a Firefighter. The following PQAs will be assessed:

- **Working with Others** – This is about working effectively with a variety of people whether they are in your team or in the community.
- **Commitment to Excellence** – This is about adopting a conscientious and proactive approach to work, and achieving and maintaining excellent standards.
- **Commitment to Development** – This is about being committed to, and being able to develop yourself and others.
- **Commitment to Diversity and Integrity** – This is about understanding and respecting other people's differences and treating people fairly and ethically.
- **Confidence & Resilience** – This is about maintaining a confident and resilient attitude in highly challenging situations.
- **Openness to Change** – This is about being open to change and actively seeking to support it.
- **Effective Communication** – This is about how effectively you verbally deliver information, make yourself understood and how you understand information.
- **Problem Solving** – This is about understanding, recalling, applying and adapting relevant information in an organised, safe and systematic way
- **Situational Awareness** – This is about maintaining an active awareness of the environment to promote safe and effective working

You must draw upon recent experiences from home life, leisure activities, work, voluntary work or education in order to answer the questions and tell us what you have done

## Pre-Employment Checks

Appointment is subject to satisfactory medical, references and a criminal records check.

## Fitness Guidance

The information in this document has been designed to provide GENERAL GUIDELINES on physical preparation for applicants intending to undertake the Retained Firefighter Selection Tests (FST's). It is important to note that good exercise training advice should be highly specific to you as an individual, and will depend upon your general health, age, current fitness level, previous training history, your lifestyle and ultimate fitness goals. The guidelines presented here should be used to give you the information you require to build yourself a specific individual fitness training programme.

Ideally you should seek advice from a qualified fitness professional and GP who will help you design, undertake and evaluate a physical training programme that is specific to your needs in preparing to undertake the FST's. Involving a qualified fitness professional will also help develop correct training techniques, as well as increasing your motivation and long term adherence to the training regime. However, it is important that you have a general understanding of the basic principles of training, and the specific physical requirements that underpin the FST's in order to make the most of the training that you undertake.

These guidelines will provide you with this knowledge and guide you through a typical 8 week training programme that is designed for a physically active individual with some previous physical training, exercise or sports experience (e.g. played football, hockey, circuit training, rambling etc.). This programme will not only maximise your chance of success on the physical FST's, but may also reduce your risk of injury during the tests and, if selected, during your subsequent firefighter training.

It is also important to realise that the role of a firefighter can be physically demanding, and consequently firefighters are required to maintain good general levels of physical fitness throughout their careers. You should not view your physical preparation for the FST's as a goal to an end, but as part of the everyday job requirement for serving firefighters. By undertaking a period of physical training before selection, you will be able to determine if you are suited to a job that requires a good level of overall fitness to be maintained during your career.

As stated previously, the following guidelines are designed to help prepare an active individual with some previous physical training, exercise or sports experience to undertake the FST's. As a good general overall level of fitness is required to undertake firefighter training and good fitness levels cannot be acquired overnight, you should only undertake this programme if you already have a basic general level of aerobic fitness. The gains in aerobic fitness over a structured 8-12 week training programme are highly individual specific, but typically average about 10-15%. Therefore, you will need to start with a reasonable level of aerobic fitness to meet the required FST's physical standards with only 8 weeks of training.

### **General Exercise Guidance**

The role of a firefighter can at times be physically demanding. Therefore the entry

selection tests are designed to reflect and assess the physical tasks that firefighters are required to perform. Firefighters are required to be aerobically fit, have good all-round body strength and local muscular endurance. Good exercise training advice is highly specific to the individual. It should be understood, therefore, that the advice provided here can only be general; prospective applicants that require further information are advised to seek individual advice, specific to their needs, from a qualified fitness professional.

### **Safety Points**

If you are in any doubt about your health or physical ability to exercise, consult your doctor before you commence physical activity. This is especially important if you are pregnant (or think you may be pregnant) or have not exercised for the last six months or had a recent illness or injury.

Cleveland Fire Brigade disclaim any liability for injury, damage or loss suffered as a result of the guidance detailed throughout this booklet.

Always warm up before commencing any exercise. Wear the correct clothing and footwear; do not train if you are unwell or injured.

### **Preparing for Exercise (Warm Up)**

Performing a warm up prepares the body for the activity about to be undertaken. The length of time needed to warm up correctly depends on many factors; however, you should allow at least 10 minutes for this very important activity. In order to reduce the risk of injury in the warm up period, a number of steps should be followed:

#### **Be Specific:**

Make sure your warm up session is geared towards the activity that you intend to perform. Cardiovascular workouts, for example running, you should start with a brisk walk leading into a light jog. For weight training workouts it is important to warm up the joints and muscles that are involved in the resistance exercise. This will increase blood flow to the muscles which will be utilized during the exercise and activate the nervous system prior to any additional stress being placed on them.

#### **Start Slowly:**

At the start of your workout your muscles will be relatively cold. Start exercising slowly and build up the intensity throughout the warm up period. This will increase your muscle temperature steadily and keep the risk from injury to a minimum.

#### **Keep Warm:**

If you are exercising in a cold environment, wear additional clothing during the warm up period and try not to stand still for too long.

#### **Stretching:**

For many years it was thought that stretching immediately prior to exercise would prevent injuries. However, there is new research with practical application that suggests that this may not prevent muscle or tendon injury. Any form of flexibility or stretching activity should be performed following a warm up period or an exercise session.

## How to Improve Physical Fitness

Improving your physical fitness will require some self-discipline and efficient use of your spare time, as an effective exercise routine needs to be completed on a regular basis.

In order to improve your physical fitness you will need to alter the frequency, intensity, and duration of your exercise above your current level. Your training should be gradual and progressive. You should start small and build up the intensity. This will produce a training effect by placing greater demands on your body. In general, the less exercise you perform the lower the training effect, and the more exercise you perform the greater the training effect. Whilst certain exercises are more specific to firefighting tasks, the need for maintaining muscular strength, endurance, and flexibility of the major muscle groups, through a well-rounded training programme, which includes aerobic, resistance and flexibility exercises is recommended.

Although age in itself is not a limiting factor to exercise training, a more gradual approach in applying the prescription at older ages seems advisable.

### Aerobic training

Depending on your current aerobic fitness standard, you will need to use the following guidelines to improve your aerobic fitness.

Frequency of training: 3-5 days per week. Intensity of training:

Heart rate monitors are a useful tool to help ensure that you train at the right intensity. If you have access to a heart rate monitor you can calculate your desired training intensity by using the following equation:

Heart rate percentage of 55-90% of Predicted Maximum

Heart Rate (PMHR)

Calculated by:  $220 - \text{Age} = \text{Predicted Maximum Heart Rate}$ . Predicted Maximum Heart Rate X 0.7 (for 70 %) 0.8 (for

80%) etc. = heart rate percentage

Or level 10-17 on your Rating of Perceived Effort (RPE) scale:

6 - 20% effort – rest	14 - 75% effort
7 - 30% effort - very, very light	15 - 80% effort - hard
8 - 40% effort	16 - 85% effort
9 - 50% effort - very light - gentle walking	17 - 90% effort - very hard
10 - 55% effort	18 - 95% effort
11 - 60% effort - fairly light	19 - 100% effort - very, very hard
12 - 65% effort	20 – Exhaustion
13 - 70% effort - moderately hard - steady pace	

Duration of training: 20-60 min of continuous or intermittent (minimum of 10-min bouts accumulated throughout the day) aerobic activity. Duration is dependent on the intensity of the activity; thus, lower-intensity activity should be conducted over a longer period of time (30 min or more), and, conversely, individuals training at higher levels of intensity should train at least 20 min or longer.

Type of activity: any activity that uses large muscle groups, which can be maintained continuously, and is rhythmical and aerobic in nature, e.g., walking-hiking, running-jogging, cycling-bicycling, cross-country skiing, aerobic dance/group exercise, rope skipping, rowing, stair climbing, swimming, skating, and various endurance game activities or some combination thereof.

Specificity: To maximize the efficiency of your training you should focus on exercises that are similar to those in the test. These include running-jogging, stepping, stair climbing and other weight bearing activities.

### **Resistance training**

In order to improve your strength and/or muscular endurance you will need to exercise against a resistance. This resistance can be your body weight, for example a press up, or the use of specifically designed equipment such as dumbbells, barbells or resistance machines. Resistance training should be progressive in nature, individualised, and provide a stimulus to all the major muscle groups that is sufficient to develop and maintain muscular strength and endurance. You should follow the subsequent guidelines to improve your muscular strength and endurance.

Frequency: 2-3 days per week\*.

Exercises: At least one set (8-15 repetitions) of 8-10 exercises that condition the major muscle groups of the body. Multiple-set regimens may provide greater benefits if time allows. The effect of exercise training is specific to the area of the body being trained. For example, training the legs will have little or no effect on the arms, shoulders, and trunk muscles, and vice versa. Therefore a whole body approach should be adopted. Muscles should also be worked in balance and as such the following exercises are recommended; chest press, seated row, shoulder press, lat pull down, squats, lunges, step up's, abdominal crunch, back extensions.

Rest: If performing multiple sets, adequate rest should be given to allow the muscles to recover before performing another 'set'.

\*Individuals should not perform the same resistance exercise on consecutive days. At least 24 hours rest should be allowed before repeating the exercise.

### **General Heart Rate Training**

Heart Rate monitors are devices which are basically designed to measure the individual beats of the heart (bpm) using electrodes located in the chest strap and transfers this information to the wrist watch.

A common and well known method for identifying what the maximum theoretical heart rate an individual could achieve during exercise is simply;

$$\text{HR max} = 220 - \text{your age}$$

Maximum Heart rate (HR max) is the maximum number of times in one minute, that the heart can contract when exercising. The maximum heart rate achievable is variable it can be approximately 10 to 20 bpm higher or lower than predicted. For example, a 40 year old could achieve a theoretical heart rate of 180 bpm;

$$\text{i.e. } 220 - 40 = 180 \text{ bpm.}$$

A heart rate monitor indication of 144 bpm for that same 40 year old individual during exercise indicates that they are working at approximately 80% HR max as shown in the table below;

bpm	% HR max
180	100%
162	90%
144	80%
126	70%
108	60%
90	50%

Once familiar with individual Heart Rates, then the level or intensity of training to be undertaken can be identified and monitored to suit individual requirements.

### Chest Press

Whilst lying flat on the bench with feet planted firmly on the floor either side of the bench with your arms extended.

Slowly lower the weight to chest level. Push the weight back to the start position.

Tips: Ensure that back is flat on the bench and not arched. Perform slowly and in control.



### Seated Row

From a seated position, with arms extended in front of the body and knees slightly flexed, draw the hands into the abdominal area squeezing the shoulder blades together.



### Shoulder Press

From an upright position, with dumbbells overhead, slowly lower the weight to shoulder level. Push the weight back up to the start position.

Tips: Ensure the back is flat if on a bench or comfortable against a ball. Perform slowly and in control. Look straight ahead.



### Lat Pull Down

From a seated position, grasp the overhead bar just wider than shoulder width. Lean back slightly and draw the elbows in towards the side of the body so that the bar rests at the top of the chest.

Tips: Do not swing during exercise.



## Squat

From a standing position with feet between hip and shoulder width apart, bend at the knees and flex at the hip until your thighs are parallel with the floor. Push through the heels to return to the standing position.

Tips: Ensure that the knees are aligned with the feet and do not pass beyond the toes.



## Lunge

From a split leg position, with one foot in front of the other, lower the back knee towards the floor so that the front thigh is almost parallel with the ground. Push off the front leg to return to the start position.

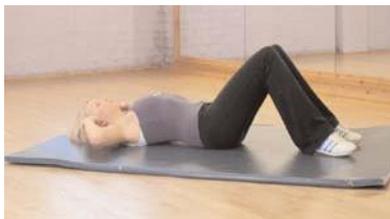
Tips: Look straight ahead. Ensure the front knee is aligned with the foot and does not pass beyond the toes.



## Abdominal crunch

Lie face up on a soft surface, bend knees and bring feet close to the buttocks. Fold your arms across your chest, or place the hand lightly behind the head. Draw your belly button towards your spine by contracting your lower abdominal muscles. Whilst holding this contraction with normal breathing, slowly raise your shoulders towards your thighs while keeping the lower back on the floor.

Tips: Lower your shoulders and upper body slowly and with control.



## Back extension

Lie on your stomach on a mat. Place your arms at your sides so that your hands are by your hips. Raise your head and shoulders off the mat as high as comfortably possible. Hold for 1-2 seconds. Lower the head and shoulders.

Tips: Do not tense your shoulder muscles.



## Flexibility

Flexibility exercises should be incorporated into the overall fitness program sufficient to develop and/or maintain range of motion (ROM). These exercises may also reduce the likelihood of injury, reduce muscle soreness following exercise and may enhance muscular performance. These exercises should stretch the major muscle groups of the body. There are a number of forms of stretching techniques. However those without specific up-to-date knowledge in this area are advised to adhere to the following guidelines.

Frequency: 2-3 days per week.

Duration: hold the stretch 1-3 times in a static (still) position for 10-30 seconds.

Exercises: Below is a list of recommended stretching exercises that should be performed:

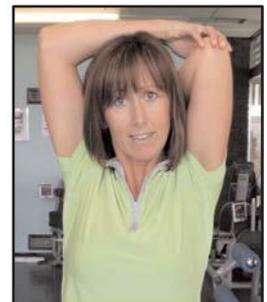
### Triceps and Upper Back Stretch

1. Sit or stand upright with one arm flexed, raised over head with elbow next to your ear, and your hand resting on your opposite shoulder blade.
2. Grasp your elbow with the opposite hand.
3. Inhale and pull your elbow behind your head.
4. Hold the stretch and relax.
5. You should feel the stretch in the back of the arm.



### Rear Deltoid and Upper Back Stretch

1. Sit or stand with one arm straight.
2. With the other hand grasp the elbow of the straight arm.
3. Inhale and pull the elbow across the chest and in towards the body.
4. Hold the stretch and relax.
5. You should feel the stretch in the back of the shoulder and upper back.



### **Pectoral and Upper Back Stretch**

1. Kneel on the floor facing a bench or chair.
2. Extend your arms above your head with your hands side by side and bend forward to rest your hands on the bench or chair with your head in its natural position.
3. Exhale and let your head and chest sink towards the floor.
4. Hold the stretch and relax.
5. You should feel the stretch in your chest and upper back.



### **Quadriceps Stretch**

1. Stand upright with one hand against a surface for balance and support.
2. Flex the opposite knee to the hand that is outreached and raise your heel to your buttocks.
3. Slightly flex the supporting leg.
4. Exhale, reach behind, and grasp your raised foot with the other hand.
5. Inhale, and pull your heel towards your buttocks.
6. Hold the stretch and relax.
7. You should feel the stretch in the top of the thigh.



### **Hamstring Stretch**

1. Sit upright on the floor with both legs straight.
2. Flex one knee and slide the heel until it touches the inner side of the opposite thigh.
3. Lower the outer side of the thigh and calf of the bent leg onto the floor.
4. Exhale, and while keeping the extended leg straight, bend at the hip and lower your extended upper torso from the hips towards the extended thigh.
5. Hold the stretch and relax.
6. You should feel the stretch in the back of the thigh.



### Adductor Stretch

1. Sit upright on the floor with your legs flexed and straddled and feet flat against one another.
2. Grasp your feet or ankles and pull them as close to your groin as possible.
3. Exhale; rest your elbows on your knees, pushing them down towards the floor.
4. Hold the stretch and relax.
5. You should feel the stretch in the inside of the thighs.



### Calf Stretch

1. Stand upright slightly more than an arm's length from a wall.
2. Bend one leg forward and keep the opposite leg straight.
3. Keep the heel of your rear foot down, sole flat on the floor and feet pointing straight forward.
4. Exhale, and flex your forward knee toward the wall
5. Hold the stretch and relax.
6. After 10-15 seconds slightly flex the knee of the back leg keeping the heel of the foot down.
7. Hold the stretch and relax.
8. You should feel the stretch in the back of the lower leg.



### Buttocks and Hip Stretch

1. Lie flat on your back with one leg crossed over the knee of the straight leg.
2. Inhale flexing the uncrossed leg off of the floor in towards the body ensuring that you head shoulders and back remain on the floor.
3. Hold the stretch and relax.
4. You should feel the stretch in your bum and back.



## General physical fitness programme

The following programme is 8 weeks long consisting of 3 running sessions, 2 weights sessions and 2 flexibility sessions per week. The programme starts relatively easy and gets progressively harder. You should alternate between your running and weight sessions so that you do not perform the same training on consecutive days e.g.

Mon	-	steady run
Tue	-	weights
Wed	-	fartlek
Thu	-	flexibility
Fri	-	steady run
Sat	-	weights
Sun	-	flexibility

If you miss an exercise session, do not attempt to do 2 sessions in 1 day to make up. If you are unwell or injured then do not train until you have fully recovered.

Make sure you have read and understood the programme before you start training

**Steady pace running:** This should be performed at a comfortable pace i.e. you should be able to hold a conversation throughout your run. This type of exercise will increase your aerobic fitness. This is included 2 x per week in the programme.

**Fartlek training:** This type of running involves changing pace throughout the session. A steady pace of running should be interspersed with faster running, sprints, jogging, uphill running and walking. The aim of the session is to work continuously for about 20 minutes using the various speeds of running when- ever you feel like it. There is no set order to this session, how- ever you should begin with about 5 minutes of steady running before you do any faster running. This session will increase your aerobic and anaerobic fitness.

**NB:** Where possible you should run on grass or trails, try to avoid road running. This will reduce the stress placed on the joints of the body.

**Resistance training:** These sessions will target all the major muscle groups and will help to improve your muscular strength and endurance.

**Flexibility training:** This is to help improve/maintain the range of motion (ROM). These exercises may also reduce the likelihood of injury, reduce muscle soreness following exercise and may enhance muscular performance.