

2 Specifications

Start here

- 1 Work in pairs. Discuss a product or facility that you and your partner both use. Make notes of any problems or features that you would like to improve in the product or facility. Explain your ideas briefly to another pair.

Examples: a computer operating system, a mobile phone network, a web browser, a gym or sports centre, a canteen or food court, a transport system

Task

- 2 Work in small groups. Look at the illustration and the information below. What do you think the complaints were about? Make notes under these headings: *safety*, *performance*, *appearance* and *ergonomics*. Then compare your notes with the information on page 112.

ergonomics = adapting a machine (or job) to the user so that it is comfortable, safe and efficient to use

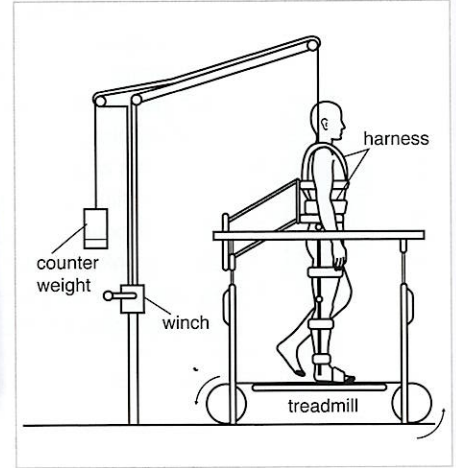
Product: TreadAir

Designed for: people recovering from an accident or injury

Purpose: so that they can exercise on treadmill safely

Method: body is lifted by winch and harness and supported by counter-weight

Feedback: complaints received from users about problems with



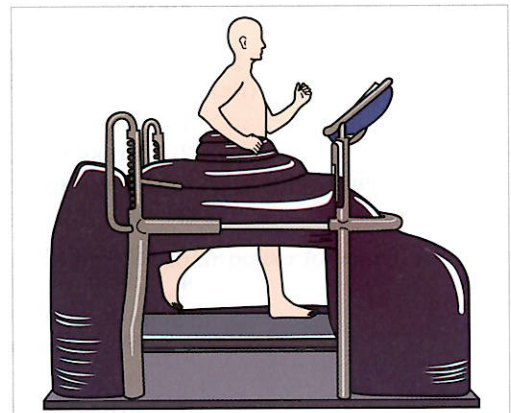
Listening

- 3 06 Listen to a product design team brainstorming how to improve the TreadAir. Complete this form.

REQUIREMENTS FOR NEW PRODUCT

DESCRIPTION	An inflatable airbag enclosing the body which can _____ without _____
PERFORMANCE	<ul style="list-style-type: none"> • Maximum support: _____ % of body weight • Air pressure adjustable in increments of _____ % • Maximum speed: _____ kph
ERGONOMICS	<ul style="list-style-type: none"> • Display type: (1) _____ (2) _____ • Able to control: (1) _____ (2) _____ • Able to alter settings during workout without _____
DIMENSIONS	_____ x _____ m footprint
WEIGHT	Compared with normal treadmill: _____
OPERATING RANGE	Temperature: _____ to _____ °C
SAFETY	Standards: (1) _____ (2) _____

- 4 Work in groups to discuss this question and make notes. To what extent do you think that the product illustrated here would meet the requirements outlined in the brainstorming session?



- Reading 5** Mark four items in this draft design specification which were not mentioned in the brainstorming session in 3.

DRAFT PRODUCT DESIGN SPECIFICATION

- 1 Recommended product name: the name should reflect the fact that it is a space spin-off, and suggest weightlessness: for example *MoonWalker* or *SpaceRunner*.
- 2 Recommended product description: 'an **enclosed** treadmill that utilises air pressure in an inflatable bag to support body weight, without a winch or harness'.
- 3 Performance requirements for new product:
 - reduce user's weight by up to 80%
 - give **precise** measured support
 - allow **incremental** (1%) adjustment of air pressure
 - provide **unrestricted** motion for legs and upper body
 - run at a **variable** speed adjustable up to 16 kph
 - present a variable incline (or slope) up to 15°
- 4 Recommended ergonomics features:
 - touch button on screen to increase / reduce support for body weight
 - adjust speed, incline and air pressure using simple controls
- 5 Operating environments: machine must be able to function within
 - an **ambient** temperature range of 10–29°C
 - a **relative** humidity range of 20–95%
- 6 Dimension and weight requirements:
 - maximum 4 x 2.5 m footprint to allow for **adequate** space around machine
 - similar weight to a normal running treadmill
- 7 Safety requirements:

Since the product is intended for export throughout Europe including the UK, compliance with all applicable BS and EU safety standards is essential.

- 6** Match these words and phrases with the adjectives (in bold) in the document in 5 which have the same or similar meaning.

- | | | | |
|--------------|-----------------------|----------------|---------------|
| 1 changeable | 3 surrounding | 5 sealed | 7 comparative |
| 2 sufficient | 4 without constraints | 6 step-by-step | 8 exact |

Language Expressing necessity, recommendation and ability

- A **necessity** *must / have to / need to / have got to*
 B **recommendation** *should / ought to*
 C **ability** *be able to / be capable of / have the ability to*

- Speaking 7** Work in pairs. Choose eight specifications from the document in 5 which are the most important, in your view.

- 8** Talk about each specification, using a variety of items from the language box above. Use a modal from list A or B, combined with a phrase from list C.

Example: *The equipment has to be capable of reducing the user's weight by up to 80%.*

- Writing 9** Rewrite sections 3 and 4 of the document in 5 as a memo to the manager of your product design team. You want to persuade your manager to support you in designing the product. Describe the product as if it *already exists*. Link the phrases in the document together using present participial phrases where appropriate.

It reduces the person's weight. It gives precise measured support. It allows incremental adjustment.

→ *It reduces the person's weight, **giving** precise measured support and **allowing** incremental adjustment.*

Begin: *The new SpaceRunner is capable of reducing the person's weight by up to 80%, giving ...*