

CUET · PHYSICAL EDUCATION · CLASS XI · CODE 321

# Adventure Sports

CUET unit: Training and Doping in Sports / Adventure Sports & Sports Environment

By UniDrill · NCERT-grounded study material

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## Snapshot

- Defines adventure sports as extraordinary activities done by people seeking excitement, thrill and a desire to explore nature; classifies them as water, land and air categories.
- Focuses on two adventure sports in depth: **Paragliding** (air) and **Surfing** (water).
- Covers history, classification, equipment (variometer, radio, GPS), launch and landing techniques of paragliding plus speed/structure data.
- Covers history, governing body, types, surfboard sizes, dangers (seabed, rip currents) and related sports for surfing.
- Ends with safety and security measures common to both paragliding and surfing — frequently tested area.

## Detailed Notes

### 2.1 Core concepts

- Adventure sports are extraordinary activities performed by individuals in search of excitement, extra enthusiasm and the desire to explore nature; they are classified as (1) Adventure water sports, (2) Adventure land sports, and (3) Adventure air sports (NCERT §Intro, p. 328).
- Examples include rafting, surfing (water); mountaineering, trekking (land); paragliding, jumping (air); camping was already discussed in Class IX (NCERT §Intro, p. 328).
- **Paragliding** is the recreational and competitive adventure sport of flying paragliders; it is engine-less / motor-free and demands courage and decisiveness (NCERT §Paragliding, p. 329).
- Historical development: Domina C. Jalbert invented advanced governable gliding parachutes with multi-cells and lateral-glide controls in **1954**; Walter Neumark predicted (in **Flight** magazine) launching by running off a cliff or slope; French engineer Pierre Lemoigne produced improved parachute designs leading to the Para-commander; **David Barish** developed the 'sail wing' in **1965** for slope-soaring at ski resorts; in **1985** Canadian Patrick Gilligan and Swiss Bertrand Dubois wrote 'The Paragliding Manual', officially coining the word 'Paragliding' (NCERT §Historical Development of Paragliding, p. 329).

- Classification of paragliding: (1) Light-weight gliding, (2) Free flying glider, (3) Foot-launched glider — like an aircraft with no rigid primary structure (NCERT §Classification of Paragliding, p. 329).
- Sitting position: the pilot sits in a harness suspended below a fabric wing of interconnected baffled cells; wing shape is maintained by suspension lines; valid gliding flights are normally 1–2 hours covering tens of km (NCERT §Sitting Position, p. 329).
- The first official Paragliding World Championship was held in **Austria in 1989** (NCERT §First World Championship 1989, p. 329).
- Strength of structure: lines are made of spectra; a single 0.66 mm line can have a breaking strength of 56 kg; wings are 20–35 sq m, span 8–12 m, weigh 3–7 kg; combined gear weighs 12–22 kg (NCERT §Strength of Paraglider Structure, p. 330).
- Speed of paragliders: typically **20–75 km/h (12–47 mph)** (NCERT §Speed of Paragliders, p. 330).
- For storage the wing is folded into a stuff-sack inside a rucksack along with the harness (NCERT §Carrying Capacity and Storage, p. 330).
- Instruments: (1) **Variometer** — helps the pilot find and stay in the 'core' of a thermal, indicates climb/sink rate via beeps/drone and shows altitude; (2) **Radio** — used in training, communication and rare ATC contact; (3) **GPS** — necessary in competitions, analyses flight, determines drift, avoids restricted airspace and aids retrieval after landing (NCERT §Instruments, pp. 330–331).
- Flying techniques: launching/landing always done into the wind; **Forward launch** in low winds (wing inflates as pilot runs forward); **Reverse launch** in higher winds (pilot faces the wing, then turns around) — has advantages over forward launch (NCERT §Flying Techniques, p. 331).
- Landing: pilots commonly lose height by flying a **figure of 8** over the landing zone, then line up into the wind and 'stall' about a metre above ground (NCERT §Landing, p. 331).
- Control: through **speed bar mechanism** — brakes and accelerator; brakes adjust the glider's speed (NCERT §Control through Speed Bar Mechanism, p. 331).
- Types of competitions: (1) **Cross-country** flying — classical form, held at club to international levels; (2) **Aerobic** — manoeuvres, individual or synchronous pairs; (3) **Bivouac** flying — a fixed route to be flown/hiked, often over several days (NCERT §Types of Competitions, pp. 331–332).
- Sky parachutes resemble paragliders but differ: in sky-diving the parachute is only a tool for safe return, while paragliders allow longer flights using thermals (NCERT p. 332).
- **Surfing**: act of riding a wave, with or without a board, regardless of stance; inducted into the Olympics from **2020**; a surface water sport where the rider (surfer) rides the forward/deep face of a moving wave (NCERT §Surfing, p. 332).

- History: surfing was central to ancient Polynesian culture for centuries; first observed by British explorers at **Tahiti in 1767**; **George Freeth** (1883–1919) is regarded as the 'Father of Modern Surfing' (NCERT §Historical Development of Surfing, p. 332).
- Governing body: **International Surfing Association**; professional contests began in **1975**, when **Margo Oberg** became the first female professional surfer (NCERT §Governing Body, p. 333).
- Types of surfing: (1) **Stand-up Surfing** — riding standing on a surfboard, long and short board variants; (2) **Body Surfing / Body Boarding** — on a body board, lying on belly or drop knee; considered the purest form because no board is used; (3) **Surf Matting** — on inflatable mats using foils; (4) **Tow-surfing** — associated with big-wave surfing, a motorised watercraft tows the surfer into the wave (NCERT §Types of Surfing, p. 333).
- Surfboard types: a **long board (10 feet)** has more friction and is slower — good for beginners needing balance; a smaller (**6 feet**) board offers control/manoeuvrability — for experienced surfers (NCERT §Types of Surfboard, p. 334).
- Dangers: **Seabed** — tossed surfers can collide violently with a shallow sea bed, especially at reef/beach breaks during low tide; **Rip currents** — channels of water flowing away from shore, sometimes 40–50 feet wide, exited by paddling parallel to the shore (NCERT §Dangers during Surfing, p. 334).
- Surfing-related sports: paddle boarding and sea kayaking (no waves needed); kite surfing and wind-surfing (wind-powered); V-drive boat wave surfing — riding the wave of a boat (NCERT §Surfing related Sports, p. 334).
- Safety and security measures (10 points): certification of paraglider, carrying safety instruments (variometer, GPS, radio), wearing helmet/knee/chest guards, no gliding without licensed personnel, recognising wave currents, recognising the deep face of a wave, practising in artificial waves first, regular inspection of brakes and lining, enough practice before long routes, and maintaining physical and mental fitness as the key decision-making factor (NCERT §Safety and Security in Paragliding and Surfing, pp. 334–335).

## 2.2 Definitions to memorise

Term	Definition	Page
Adventure sports	Extraordinary activities performed by individuals in search of excitement, extra enthusiasm and the desire to explore nature	328
Paragliding	Recreational and competitive adventure sport for flying paragliders; engine-less / motor-free	329
Variometer	Instrument that helps the pilot find and stay in the 'core' of a thermal and indicates climb/sink rate and altitude	330
GPS (in paragliding)		

Term	Definition	Page
	Necessary accessory in competitions; analyses flying technique, determines drift, avoids restricted airspace and aids retrieval	330–331
Forward launch	Low-wind launch where the pilot runs forward with the wing behind so air pressure inflates it	331
Reverse launch	High-wind launch where the pilot faces the wing, brings it up, turns around and runs to complete the launch	331
Cross-country flying	Classical form of paragliding competition, held at club, regional, national and international levels	331
Bivouac flying	Competition where a fixed route is flown or hiked, possibly over several days	332
Surfing	Surface water sport of riding the forward or deep face of a moving wave, with or without a board	332
Body Surfing	Surfing without a board, using one's own body to catch and ride the wave; considered the purest form	333
Tow-surfing	Big-wave surfing where a motorised watercraft tows the surfer into the wave front	333
Rip current	Water channel flowing away from the shore; exited by paddling parallel to the shore	334
Aerobatic competition	Paragliding contest of manoeuvres — individual or synchronous pair	331
Foot-launched glider	Aircraft-like wing with no rigid primary structure	329
Speed bar	Pilot's control mechanism — brakes + accelerator	331
Sail wing	Glider design by David Barish (1965) for slope-soaring	329
The Paragliding Manual	First flight manual coined by Gilligan + Dubois, 1985	329
Stand-up Surfing	Riding wave standing on board (long 10 ft / short 6 ft)	333
Surf Matting	Surfing on inflatable mats with foils	333
Kite Surfing	Wind-powered surfing variant	334
Wind-Surfing	Wind-powered surfing variant using a sail-rigged board	334
Paddle Boarding	Wave-free surfing-related sport	334
International Surfing Association	Apex global governing body for surfing	333
George Freeth	Father of Modern Surfing (1883–1919)	332

## 2.3 Diagrams / processes to remember

- **Fig. 11.1 Paragliding (p. 328)** — multiple paragliders soaring above mountains, illustrating the air-sport nature.
- **Fig. 11.2 Surfing-1 (p. 332)** — surfer riding a wave on a surfboard (stand-up).
- **Fig. 11.3 Surfing-2 (p. 333)** — surfer on a board mid-ride; illustrates stand-up surfing posture.
- Process: **Forward launch** → **flight** → **figure-of-8 to lose height** → **stall ~1 m above ground (landing)** (pp. 331).
- Numerical facts to memorise: paraglider speed **20-75 km/h**; wing area **20-35 sq m**; span **8-12 m**; wing weight **3-7 kg**; total gear **12-22 kg**; line breaking strength **56 kg** for 0.66 mm; surfboard sizes **10 ft (long) vs 6 ft (short)**; rip-current width up to **40-50 feet** (pp. 330, 334).

## 2.4 Common confusions / NTA trap points

- Confusing **1954 (Jalbert invention)**, **1965 (Barish sail wing)**, **1985 (term 'Paragliding' coined)** and **1989 (First World Championship, Austria)** — NTA loves swapping these dates.
- **Forward vs reverse launch** — forward = LOW winds; reverse = HIGH winds. Distractors flip this.
- **Body surfing** is the purest form (no board), NOT stand-up surfing.
- **Surfing inducted in Olympics from 2020**, not 2016 or 2024.
- **Margo Oberg (1975)** — first female professional surfer; **George Freeth** — Father of Modern Surfing. These two names are often swapped.
- Exit a **rip current by paddling parallel to the shore**, not by swimming straight back to shore.
- Variometer measures **climb/sink rate and altitude**, not speed (speed bar controls speed).
- **10 ft surfboard** = long, slow, more friction → beginners; **6 ft** = short, manoeuvrable → experienced surfers. NTA loves to invert.
- **Cross-country, Aerobic, Bivouac** are the three paragliding competition types — "tow flying" is NOT one (tow-surfing exists in surfing, not paragliding).
- Paraglider speed = **20-75 km/h**; wing area 20-35 sq m; span 8-12 m; wing weight 3-7 kg; total gear 12-22 kg. Numeric blocks are CUET goldmines.
- Spectra lines: 0.66 mm = **56 kg** breaking strength.
- Surfing was first observed by British explorers at **Tahiti 1767** — not Hawaii or Australia.
- **Polynesian culture** is the ancient root of surfing.
- Landing technique = fly a **figure of 8** to lose height → stall ~1 m above ground.

## 2.5 Key concepts table — adventure-sport classifications, dates, specifications

#	Concept / fact	NCERT detail	Page
1	Adventure sports — categories	Water, Land, Air	328
2	Water adventure examples	Rafting, surfing	328
3	Land adventure examples	Mountaineering, trekking	328
4	Air adventure examples	Paragliding, jumping	328
5	Paragliding nature	Engine-less / motor-free flight	329
6	Paragliding classification	Light-weight gliding; Free flying glider; Foot-launched	329
7	Jalbert	1954 — governable parachute with multi-cells	329
8	Lemoigne	French engineer — Para-commander	329
9	David Barish	1965 — 'sail wing' for slope-soaring	329
10	Patrick Gilligan + Bertrand Dubois	1985 — 'The Paragliding Manual' coined "Paragliding"	329
11	First Paragliding World Championship	Austria, 1989	329
12	Paraglider speed	20–75 km/h (12–47 mph)	330
13	Wing area / span / weight	20–35 sq m / 8–12 m / 3–7 kg	330
14	Total gear weight	12–22 kg	330
15	Line	Spectra; 0.66 mm = 56 kg breaking strength	330
16	Variometer	Finds thermal core; climb/sink rate; altitude	330
17	Radio	Training + communication + rare ATC	330
18	GPS	Competitions — drift, restricted airspace, retrieval	330–331
19	Forward launch	Low winds; pilot runs forward	331
20	Reverse launch	Higher winds; face wing, turn, run	331
21	Landing	Figure of 8 → stall ~1 m above ground	331
22	Control	Speed bar — brakes + accelerator	331
23	Competition types	Cross-country; Aerobatic; Bivouac	

#	Concept / fact	NCERT detail	Page
			331–332
24	Surfing — Olympic induction	2020	332
25	Surfing first observed	Tahiti, 1767 by British explorers	332
26	George Freeth	"Father of Modern Surfing" (1883–1919)	332
27	International Surfing Association	Governing body	333
28	Margo Oberg	First female professional surfer, 1975	333
29	Stand-up surfing	Long-board (10 ft) + short-board (6 ft)	333–334
30	Body surfing	No board — purest form	333
31	Surf matting	Inflatable mats with foils	333
32	Tow-surfing	Motorised watercraft tows surfer	333
33	Danger — seabed	Collision at reef/beach break, low tide	334
34	Danger — rip currents	40–50 ft wide; exit by paddling parallel to shore	334
35	Surfing-related sports	Paddle boarding, sea kayaking, kite surfing, wind-surfing, V-drive boat	334
36	Safety measures (10 pts)	Certification, instruments, helmet/guards, licensed personnel, wave-current recognition, deep-face recognition, artificial-wave practice, brake inspection, sufficient practice, mind+body fitness	334–335

## 2.6 Extended discussion — air sport mechanics, water sport heritage and shared safety logic

The structural payoff is the tripartite classification — **water / land / air** — and the in-depth treatment of one representative from the air category (paragliding) and one from the water category (surfing). Land sports are surveyed only briefly (mountaineering, trekking, camping already covered in Class IX).

**Paragliding** is presented as the apex air adventure sport because it is engine-less, completely human-launched, and capable of multi-hour cross-country flights using thermals. The historical chain — Jalbert 1954 (governable parachute) → Neumark (predicted cliff/slope launches) → Lemoigne (Para-commander) → Barish 1965 (sail wing for slope soaring) → Gilligan + Dubois 1985 (Paragliding Manual) → Austria 1989 (First World Championship) — is the densest date cluster. The three competition types (Cross-country, Aerobatic, Bivouac) map onto distance, skill and endurance respectively.

The instrument trio (variometer, radio, GPS) is a high-yield match-the-following block, with variometer's thermal-core function the single most testable detail. Launch technique (forward = low wind, reverse = high wind) and landing technique (figure of 8 → stall ~1 m above ground) are operational details that CUET frequently weaves into assertion-reason items. The numeric block — 20–75 km/h speed, 20–35 sq m wing area, 8–12 m span, 3–7 kg wing, 12–22 kg total gear, 56 kg line breaking strength — gives examiners ample raw material for direct-recall MCQs.

**Surfing** is presented as the apex water adventure sport because it requires no propulsion (the wave is the engine) and is now an Olympic sport (inducted from 2020). The history runs from ancient Polynesian roots → first European observation at Tahiti in 1767 → George Freeth (1883–1919) as Father of Modern Surfing → International Surfing Association as global governing body → first female professional surfer Margo Oberg in 1975. The classification cluster — stand-up surfing (long 10 ft board for beginners, short 6 ft board for experts), body surfing (no board, purest form), surf matting (inflatable foils), tow-surfing (big-wave, motor-towed) — is a near-guaranteed CUET match-the-following. The two principal dangers (seabed at reef/beach breaks during low tide; rip currents 40–50 ft wide) are paired with their counter-measures (avoid shallow breaks; paddle parallel to shore). The set of surfing-related sports (paddle boarding, sea kayaking, kite-surfing, wind-surfing, V-drive boat wave surfing) extends the topic's testable surface area.

A **10-point safety protocol shared by paragliding and surfing** completes the topic: paraglider certification; carrying safety instruments (variometer + GPS + radio); helmet, knee and chest guards; no gliding without licensed personnel; recognising wave currents; recognising the deep face of a wave; practising in artificial waves first; regular inspection of brakes and lining; sufficient practice before long routes; and the meta-principle that "physical and mental fitness is the key decision-making factor". This protocol commonly appears as a multi-statement "select the correct safety measures" CUET stem. The overall takeaway for CUET preparation is to lock the date cluster, the instrument trio, the launch-technique dichotomy, the surfing classification, the rip-current rule and the 10-point safety list — six chunks that together cover virtually every question this chapter has produced in 2023–25.

## Practice MCQs

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## PYQ Alignment

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Adventure Sports is a recurring topic in CUET Physical Education papers, typically yielding 6–8 MCQs per year across direct recall (dates, inventors, instruments), match-the-following on surfing types and paragliding competitions, and assertion–reason items

on safety measures and rip currents. Dates (1954/1965/1985/1989/2020) and the variometer-GPS-radio instrument triad are repeatedly tested.

