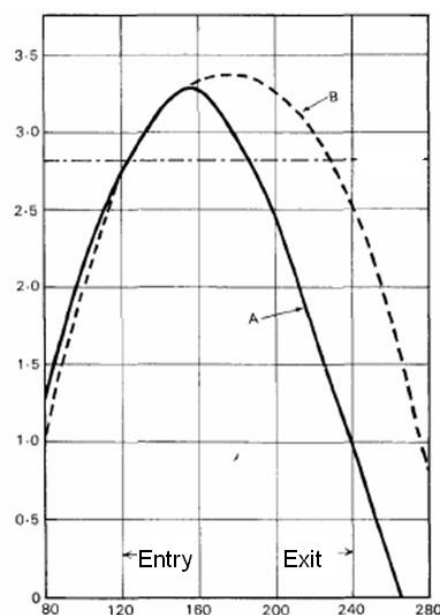
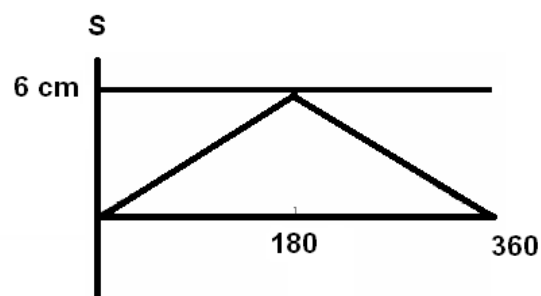


## SHEDDING FAQ

- 1) a) For a 5 up 3 down twill weave, the crank shaft, bottom shat and tappet shaft r.p.m. is X, Y and Z. Determine X: Y: Z.  
 b) For a 4 up 2 down twill weave, the crank shaft, bottom shat and tappet shaft r.p.m. is X, Y and Z respectively. Determine X: Y: Z.
- 2) Why the lift of the back heald is more than that of front heald when the plain woven fabric is manufactured? Why the heald reversing rollers are having different diameters in a plain loom?
- 3) Calculate the lift of the cam controlling the back heald from the following particulars:
  - Throw (lift) of the cam for the front heald = 10 cm
  - The distance between the front and back heald = 2.5 cm
  - The distance between the fulcrum and bowl on the treadle = 20 cm
  - The distance between the bowl and the fastening point of the back heald = 20 cm
  - Diameter of small reversing roller = 5 cm
  - Diameter of large reversing roller = 6cm
- 4) What are early shedding and late shedding? What kind of shedding would be preferred for weaving the following
  - i. Silk fabrics from filament yarns
  - ii. Cotton fabric with very high areal density
- 5) Explain how the following profiles of shade depth are achieved with different shedding timing. Which profile will you choose for silk warp and why?



- 6) What is staggering of healds? How is it implemented in a loom with cam shedding mechanism? How warp breaks are reduced by this technique?
- 7) Derive the expression for strain in the warp yarn during the shedding operation if the total shed length is ' $L$ ', shed symmetry parameter is ' $i$ ' and vertical movement of the heald during shedding is ' $2h$ '.
- 8) Determine the ratio of strain created in the warp threads during shedding by the front heald and back heald if the total shed length (distance between the cloth fell and back rest) is 150 cm, front shed length for the front heald is 30 cm, distance between the front and back heald is 2.5 cm, diameters of reversing rollers are 5 cm and 6 cm.
- 9) Classify the types of sheds. For three up one down twill, show the heald displacement pattern for bottom closed shed and open shed.
- 10) Explain the disadvantage of simple spring reversing mechanism. How this disadvantage could be minimized?
- 11) What is matched shedding cam? Explain its advantages over the negative cam shedding system?
- 12) A loom is producing plain woven fabric. Two cams are available for shedding. One cam is having 'SHM' for the rise and fall of the follower. Another cam is having 'linear' rise and fall. Which one will you prefer and why?
- 13) Discuss the relative merits and demerits of low lift and long dwell vs high lift and low dwell shedding cams.
- 14) Design a linear cam which will follow the displacement profile shown in the following Figure. The minimum distance between the centres of cam and follower is 4 cm and follower diameter is 2 cm. Can it be used for weaving plain fabrics?



- 15) Design a shedding cam for plain weave. The minimum and maximum radius of the cam is 3 cm and 8 cm respectively. The diameter of the follower is 3 cm. The duration of each dwell period is 80 degree of crank shaft rotation. The follower has linear displacement pattern. Mark the important distances and angles on the cam.
- 16) Design a cam for 2 up 1 down twill weave from the following specifications:
- Minimum centre to centre distance= 5 unit
  - Throw of the cam = 4 unit
  - Radius of the follower= 1 unit
  - Dwell= 1/3 of pick
  - Rise of follower in SHM
  - Fall of follower in linear pattern
- 17) Explain the limitations of cam shedding with suitable figures. What is the role of cam size in this regard?
- 18) Explain the working principle of a double acting dobbie with neat diagram. Show the Peg plan for the Keighley dobbie for 2/1/2/1 twill weave.
- 19) Describe the working principles of following jacquards. If the jacquard can control 400 individual ends then how many hooks and needles would be required in each case.
- a. Double lift and double cylinder type
  - b. Double lift and single cylinder type
  - c. Single lift and single cylinder type
- 20) What are the basic differences between cam shedding and jacquard shedding system? Explain the working principle of electronic jacquard with neat diagram.