

TABLE showing the Dew-point of the Air at different degrees of temperature, when the reading of the Wet Bulb of the Thermometer is from 1 to 10 degrees below that of the Dry Bulb.

Temperature (Fahrenheit).	Dew-point when the Wet Bulb stands from 1° to 10° lower than the Dry Bulb.									
	1° Lower.	2° Lower.	3° Lower.	4° Lower.	5° Lower.	6° Lower.	7° Lower.	8° Lower.	9° Lower.	10° Lower.
34	31½	28½								
36	33½	31	28½							
38	35½	33½	30½	28½						
40	37½	35½	33½	30½	28½					
42	39½	37½	35½	33½	31	28½				
44	41½	39½	37½	35½	33	30½	28½			
46	44	41½	39½	37½	35½	33½	31½	29½		
48	46	43½	41½	39½	37½	35½	33½	31½	29	
50	48	45½	43½	41½	39½	37½	35½	33½	31	29
52	50	48	46	44	42	40	38	36	34	32
54	52	50	48	46	44	42	40	38	36	34
56	54	52	50	48	46	44	42	40	38	36
58	56	54½	52½	50½	48½	46½	44½	42½	41	39
60	58	56½	54½	52½	50½	48½	46½	44½	43	41
62	60	58½	56½	54½	52½	50½	48½	46½	45	43
64	62	60½	58½	56½	54½	52½	50½	48½	47	45
66	64½	62½	60½	58½	57	55½	53½	51½	49½	48
68	66½	64½	62½	60½	59	57½	55½	53½	51½	50
70	68½	66½	64½	62½	61	59½	57½	55½	53½	52
72	70½	68½	66½	64½	63	61½	59½	57½	55½	54
74	72½	70½	68½	67½	65½	63½	62	60½	58½	57
76	74½	72½	71	69½	67½	65½	64	62½	60½	59
78	76½	74½	73	71½	69½	67½	66	64½	62½	61
80	78½	76½	75	73½	71½	69½	68	66½	64½	63
82	80½	78½	77	75½	73½	71½	70	68½	66½	65
84	82½	80½	79	77½	75½	73½	72	70½	68½	67
86	84½	82½	81	79½	77½	75½	74	72½	70½	69
88	86½	84½	83½	81½	80	78½	76½	75½	73½	72
90	88½	86½	85½	83½	82	80½	78½	77½	75½	74

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REGULATIONS TO BE OBSERVED IN MAKING UP CARTRIDGES, FILLING SHELLS, AND EXAMINING AMMUNITION IN LABORATORIES IN ARTILLERY CHARGE.

1. By the term "Laboratory" is meant the block of buildings (with the passages and ways leading thereto) in which the examination of all ammunition will take place, cartridges made up, and shells filled. In most works suitable buildings for the purpose have been erected, consisting of a lobby with barrier at the entrance, and filling room for shells or cartridges, with hatches or openings for the admission and delivery of powder or filled cartridges and shells. Where no laboratory building exists a tent will be used.

2. Laboratory operations will be carried on under the superintendence of an officer, who must satisfy himself that the several men, as detailed

in § 3, understand the duties entrusted to them. The presence of an officer will not, however, be necessary at small detached forts or batteries in charge of master gunners where ammunition is made up for the auxiliary artillery.

3. The party for laboratory operations will be detailed as follows:—

Two men as magazine men, to issue powder in barrels from the magazine, and receive and stow cases or cylinders containing made-up cartridges.

Four men for conveying the powder barrels and cases with cartridges or filled shell to and from the laboratory. Two men will be sufficient if only one barrel of powder, or less, be required.

Eight men for the cartridge or shell-filling room, or less, if a small quantity of ammunition is to be made up. These men will be detailed to unhead the barrels, weigh out charges, make up cartridges or fill shells, as may be required.

Two men will be required at the entrance or receiving hatch, to pass in empty shells.

4. The men engaged in the laboratory will exchange their clothing and boots for laboratory clothing and slippers, in the place provided at the entrance, and will on no account re-pass the barrier without again changing their clothing.

5. Previous to being told off, the men must be warned to lay aside any knives, pipes, matches, or combustibles they may have about them. Any infringement of this rule will be dealt with as *disobedience of orders*.

6. The operations of filling shells and making up cartridges will never be carried on at the same time in the same room or tent.

7. The greatest attention will be paid to cleanliness in all parts of the laboratory and ways leading thereto; also in the wagons and barrows used for the conveyance of the powder or ammunition to or from the laboratory. Any loose grains of powder, dust, or grit will at once be swept up.

8. No barrow, tool, or tackle used outside will be admitted within the barrier at the entrance of the laboratory.

9. Nothing will be kept inside the barrier of the laboratory but the authorised articles for a laboratory, a proportion of clothing, also a supply of zinc cylinders for cartridges, which must be thoroughly examined previous to admission.

10. The shells to be filled will be piled on old shot or stone, outside the entrance to the laboratory or hatch, lettered "For admission of 'shell,' if there be one. The shells will be thoroughly cleaned and brushed externally before being passed into the laboratory—planks being laid down when the heavier shells are filled, in order to save the floor.

11. All shells, previous to filling, will be carefully searched internally, and all loose filings or pieces of lacquer removed.

12. All shells, up to the 9-inch inclusive, can be *up-ended* by hand on the blocks, for examination and filling. Heavier shells require the tackle and strap.

13. Made-up cartridges or filled shells will on no account be issued by the same door or hatch through which the loose powder or empty shells are passed in.

14. Powder barrels will be conveyed to the laboratory, and zinc cylinders containing filled cartridges to the magazine or cartridge stores, in barrows, in order to keep them free from dirt and grit.

15. The floor of the chamber in the laboratory, appropriated as a filling room, will be covered with hides when in use.

16. Empty powder barrels will be passed out at once, and stored in a clean place; and in the event of a barrel not being emptied, it will be re-headed and returned to the magazine.

17. Not more than the equivalent to two barrels of powder will be in the laboratory, or in transit between the magazine and the laboratory, at the same time.

18. A copy of these instructions attached to a board will be hung up in the entrance to the laboratory. Copies for this purpose, printed on foolscap, can be obtained on demand.

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**REGULATIONS TO BE OBSERVED IN THE EMPLOYMENT OF LAMPS FOR
LIGHTING MAGAZINES, AMMUNITION STORES, LABORATORIES, AND
THEIR PASSAGES.**

1. On no account will any but the authorized lamps be used for the purpose of lighting magazines, ammunition stores, laboratories, and their passages.

2. Such lamps only will be lighted from time to time as the officer commanding may direct.

3. A magazine copper lantern will be used for the inspection of the ammunition stores and underground passages.

4. One or more men, as may be required, will be specially detailed as "lampmen" for each work, to attend to all the lighting arrangements and stores connected therewith.

5. As all passage and wall lamps required for lighting the ammunition stores can be placed in position from the "light" passages, the lampmen will on no account pass beyond the junction of the "light" passages with the general passages.

6. When it is impossible to clean the glass of the light recess from the lamp passage, such glass must be cleaned by one of the magazine men from the inside. This in some cases may necessitate the unscrewing and removing of the frame; if so, care will be taken that it is properly replaced. This operation should be effected in the presence of the officer or non-commissioned officer in charge.

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6a. Lamp barrows and trays are provided for the carriage of the lamps to and from the lamp room. Care must be taken that they are always used, and that the lamps are not placed on the ground or floor, as the glasses are thus broken.

7. All lamps, when not in use, will be kept in the lamp room.

8. A copy of these instructions attached to a board will be hung up in each lamp room. Copies for this purpose, printed on foolscap paper, can be obtained on demand.

9. Should any special instructions be required in any particular work for the guidance of the lampmen in the management of any peculiar lamp recesses, they should be added in manuscript.