

LAT. 12 N

MID-WINTER I LAT. 12 N

WINTER II LAT. 12 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	20 17	Nov 4 06h 26m	Nov 26 06h 25m	Nov 19 06h 21m	
		17h 40m	18h 00m	18h 06m	
5 30	111 -0.2	106 -0.2	100 -0.2	6 30	
6 0	113	107 -0.1	101 -0.1	6 0	
6 30	114	108	103	5 30	
7 0	116 0.1	110 0.1	104 0.1	5 0	
7 30	118 0.2	112 0.2	106 0.3	4 30	
8 0	121 0.3	115 0.3	109 0.4	4 0	
8 30	125 0.4	118 0.4	111 0.5	3 30	
9 0	129 0.5	121 0.5	115 0.6	3 0	
9 30	134 0.6	126 0.6	119 0.8	2 30	
9 45	137 0.6	129 0.7	122 0.8	2 15	
10 0	140 0.6	132 0.7	125 0.9	2 0	
10 15	144 0.6	135 0.7	128 0.9	1 45	
10 30	148 0.5	139 0.7	132 1	1 30	
10 45	153 0.5	144 0.7	137 1	1 15	
11 0	158 0.4	149 0.7	142 1	1 0	
11 15	163 0.3	154 0.6	148 0.9	12 45	
11 30	169 0.2	160 0.5	155 0.7	12 30	
11 45	174 0.1	167 0.3	163 0.5	12 15	
12 0	180	173 0.2	171 0.3	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	24 5	10 19	21 5	31 23	
	06h 14m	06h 07m	06h 00m	18h 11m	
5 30	94 -0.2	89 -0.2	85 -0.1	6 30	
6 0	95	91	87	6 0	
6 30	97	92	88 0.1	5 30	
7 0	99 0.2	94 0.2	90 0.2	5 0	
7 30	100 0.3	96 0.3	92 0.4	4 30	
8 0	103 0.4	98 0.5	93 0.5	4 0	
8 30	105 0.6	100 0.7	95 0.7	3 30	
9 0	108 0.7	103 0.8	97 0.9	3 0	
9 30	112 0.9	106 1.0	100 1.2	2 30	
9 45	115 1	108 1.2	102 1.3	2 15	
10 0	117 1.1	111 1.3	104 1.5	2 0	
10 15	121 1.2	114 1.4	107 1.7	1 45	
10 30	124 1.3	117 1.6	110 1.9	1 30	
10 45	129 1.3	122 1.7	113 2.1	1 15	
11 0	135 1.3	127 1.8	119 2.4	1 0	
11 15	141 1.3	135 1.8	126 2.6	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	31 4	9 13	18 26	26 26	
	05h 54m	05h 48m	05h 44m	18h 12m	
5 30	82 -0.1	79	76	6 30	
6 0	84	80	77	6 0	
6 30	85 0.1	82 0.2	79 0.2	5 30	
7 0	87 0.3	83 0.3	80 0.3	5 0	
7 30	88 0.4	84 0.4	81 0.5	4 30	
8 0	90 0.6	85 0.6	82 0.6	4 0	
8 30	91 0.8	87 0.8	83 0.8	3 30	
9 0	93 1	88 1.0	84 1.1	3 0	
9 30	95 1.3	89 1.3	85 1.4	2 30	
9 45	97 1.4	90 1.5	85 1.6	2 15	
10 0	98 1.6	91 1.7	85 1.8	2 0	
10 15	100 1.9	92 2.0	86 2.1	1 45	
10 30	102 2.1	93 2.4	86 2.5	1 30	
10 45	105 2.5	95 2.9	86 3.1	1 15	
11 0	109 2.9	97 3.6	86 3.9	1 0	
11 15	115 3.4	100 4.6	86 5.3	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m				
Dec 7	+9m	Jan 17	-10m	Feb 8	-14m
" 15	+5m	Feb 8	-14m	Feb 24	-13m
" 23	+1m				
" 31	-3m	Nov 4	+16m	Oct 19	+15m
Jan 7	-6m	" 26	+13m	Nov 4	+16m
" 14	-9m				

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 15 N

MID-WINTER I LAT. 15 N

WINTER II LAT. 15 N

SPRING & AUTUMN III

		SUN'S AZIMUTH					
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	Solar Time	Nov -- Jan	
A.M. 20	17	17	8	8	P.M. 20	17	
(Blue Scale)		Nov -- Nov	Oct -- Nov	Oct -- Nov	(Red Scale)		
		4	26	19		4	
Sunrise 06h 20m		06h 29m		06h 24m	Sunrise 06h 20m		
Sunset 17h 35m		17h 56m		18h 04m	Sunset 17h 35m		
5 30	111 -0.2	105 -0.3	99 -0.2	99 -0.2	5 30	111 -0.2	
6 0	112	107 -0.1	101 -0.1	101 -0.1	6 0	112	
6 30	114	108	103	103	6 30	114	
7 0	116 0.1	110	105 0.1	105 0.1	7 0	116 0.1	
7 30	119 0.2	113 0.2	107 0.2	107 0.2	7 30	119 0.2	
8 0	122 0.3	116 0.3	110 0.4	110 0.4	8 0	122 0.3	
8 30	126 0.4	119 0.4	113 0.5	113 0.5	8 30	126 0.4	
9 0	130 0.5	123 0.5	117 0.6	117 0.6	9 0	130 0.5	
9 30	136 0.5	128 0.6	121 0.7	121 0.7	9 30	136 0.5	
9 45	139 0.5	131 0.6	124 0.8	124 0.8	9 45	139 0.5	
10 0	142 0.5	134 0.6	127 0.8	127 0.8	10 0	142 0.5	
10 15	146 0.5	137 0.7	131 0.8	131 0.8	10 15	146 0.5	
10 30	150 0.5	141 0.6	135 0.9	135 0.9	10 30	150 0.5	
10 45	154 0.4	146 0.6	140 0.8	140 0.8	10 45	154 0.4	
11 0	159 0.4	151 0.6	145 0.8	145 0.8	11 0	159 0.4	
11 15	164 0.3	156 0.5	151 0.7	151 0.7	11 15	164 0.3	
11 30	169 0.2	162 0.4	157 0.6	157 0.6	11 30	169 0.2	
11 45	175	168 0.3	164 0.4	164 0.4	11 45	175	
12 0	180	174 0.1	172 0.2	172 0.2	12 0	180	

		SUN'S AZIMUTH					
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	Solar Time	Feb -- Mar	
A.M. 5	19	23	5	13	P.M. 5	19	
(Blue Scale)		Oct -- Oct	Sep -- Oct	Sep -- Sep	(Red Scale)		
Sunrise 06h 15m		06h 07m		05h 59m	Sunrise 06h 15m		
Sunset 18h 08m		18h 10m		18h 11m	Sunset 18h 08m		
5 30	93 -0.2	89 -0.2	85 -0.1	85 -0.1	5 30	93 -0.2	
6 0	95	91	87	87	6 0	95	
6 30	97	93	89 0.1	89 0.1	6 30	97	
7 0	99 0.2	95 0.2	91 0.2	91 0.2	7 0	99 0.2	
7 30	101 0.3	97 0.3	93 0.4	93 0.4	7 30	101 0.3	
8 0	104 0.4	99 0.5	95 0.5	95 0.5	8 0	104 0.4	
8 30	107 0.6	102 0.6	97 0.7	97 0.7	8 30	107 0.6	
9 0	110 0.7	105 0.8	100 0.9	100 0.9	9 0	110 0.7	
9 30	115 0.9	109 1.0	104 1.1	104 1.1	9 30	115 0.9	
9 45	118 0.9	112 1.1	106 1.2	106 1.2	9 45	118 0.9	
10 0	121 1	115 1.2	108 1.4	108 1.4	10 0	121 1	
10 15	124 1.1	118 1.3	112 1.5	112 1.5	10 15	124 1.1	
10 30	128 1.1	122 1.4	115 1.7	115 1.7	10 30	128 1.1	
10 45	133 1.1	127 1.5	120 1.9	120 1.9	10 45	133 1.1	
11 0	139 1.1	133 1.5	126 2	126 2	11 0	139 1.1	
11 15	145 1.1	140 1.4	133 2	133 2	11 15	145 1.1	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH					
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	Solar Time	Mar -- Apl	
A.M. 4	13	26	4	18	P.M. 4	13	
(Blue Scale)		Sep -- Sep	Aug -- Sep	Aug -- Aug	(Red Scale)		
Sunrise 05h 53m		05h 46m		05h 41m	Sunrise 05h 53m		
Sunset 18h 12m		18h 14m		18h 15m	Sunset 18h 12m		
6 30	82 -0.1	78	76	76	6 30	82 -0.1	
6 0	84	80	78	78	6 0	84	
6 30	86 0.1	82 0.2	79 0.2	79 0.2	6 30	86 0.1	
7 0	87 0.3	84 0.3	81 0.3	81 0.3	7 0	87 0.3	
7 30	89 0.4	85 0.4	83 0.5	83 0.5	7 30	89 0.4	
8 0	91 0.6	87 0.6	84 0.6	84 0.6	8 0	91 0.6	
8 30	93 0.7	89 0.8	86 0.8	86 0.8	8 30	93 0.7	
9 0	96 1	91 1.0	87 1.1	87 1.1	9 0	96 1	
9 30	99 1.2	93 1.3	89 1.4	89 1.4	9 30	99 1.2	
9 45	101 1.4	95 1.5	90 1.6	90 1.6	9 45	101 1.4	
10 0	103 1.5	96 1.7	91 1.8	91 1.8	10 0	103 1.5	
10 15	105 1.7	98 2.0	92 2.1	92 2.1	10 15	105 1.7	
10 30	109 2	101 2.3	94 2.5	94 2.5	10 30	109 2	
10 45	113 2.2	104 2.7	95 3	95 3	10 45	113 2.2	
11 0	118 2.5	108 3.2	98 3.7	98 3.7	11 0	118 2.5	
11 15	126 2.7	114 3.7	102 4.7	102 4.7	11 15	126 2.7	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m				
Dec 7	+9m	Jan 17	-10m	Feb 8	-14m
" 15	+5m	Feb 8	-14m	Feb 24	-13m
" 23	+1m				
" 31	-3m	Nov 4	+16m	Oct 19	+15m
Jan 7	-6m	" 26	+13m	Nov 4	+16m
" 14	-9m				

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 18 N

MID-WINTER I LAT. 18 N

WINTER II LAT. 18 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	Nov 20 17	Nov 4 26	Oct 19 4	Nov 8 24	
	Sunrise 06h 26m	06h 33m	06h 27m		
	Sunset 17h 29m	17h 52m	18h 01m		
5 30	110 -0.2	104 -0.3	98 -0.3	6 30	
6 0	112 -0.1	106 -0.2	100 -0.1	6 0	
6 30	114	108	103	5 30	
7 0	117	111	105 0.1	5 0	
7 30	120 0.2	113 0.2	108 0.2	4 30	
8 0	123 0.3	116 0.3	111 0.3	4 0	
8 30	127 0.3	120 0.4	114 0.4	3 30	
9 0	132 0.4	124 0.5	118 0.6	3 0	
9 30	137 0.4	130 0.5	124 0.7	2 30	
9 45	140 0.5	133 0.6	126 0.7	2 15	
10 0	144 0.5	136 0.6	130 0.7	2 0	
10 15	147 0.4	139 0.6	133 0.7	1 45	
10 30	151 0.4	143 0.6	138 0.8	1 30	
10 45	156 0.4	148 0.5	142 0.7	1 15	
11 0	160 0.3	152 0.5	147 0.7	1 0	
11 15	165 0.3	157 0.4	153 0.6	12 45	
11 30	170 0.2	163 0.3	159 0.5	12 30	
11 45	175	168 0.2	166 0.4	12 15	
12 0	180	174 0.1	173 0.2	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	Feb 24 10	Mar 10 21	Mar 21 31	Mar 31	
	Sunrise 06h 17m	06h 07m	05h 59m		
	Sunset 18h 06m	18h 09m	18h 12m		
5 30	93 -0.2	88 -0.2	84 -0.1	6 30	
6 0	95	91	87	6 0	
6 30	97	93	89 0.1	5 30	
7 0	100 0.2	95 0.2	91 0.2	5 0	
7 30	102 0.3	98 0.3	94 0.4	4 30	
8 0	105 0.4	101 0.5	96 0.5	4 0	
8 30	109 0.5	104 0.6	99 0.7	3 30	
9 0	113 0.7	108 0.8	103 0.9	3 0	
9 30	117 0.8	112 0.9	107 1.1	2 30	
9 45	120 0.9	115 1.0	110 1.2	2 15	
10 0	124 0.9	118 1.1	113 1.3	2 0	
10 15	127 1	122 1.2	116 1.4	1 45	
10 30	132 1	126 1.2	120 1.5	1 30	
10 45	136 1	131 1.3	125 1.6	1 15	
11 0	142 1	137 1.3	132 1.6	1 0	
11 15	149 0.9	144 1.2	139 1.6	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	Mar 31 9	Apl 9 18	Apl 18 26	Apl 26	
	Sunrise 05h 51m	05h 44m	05h 38m		
	Sunset 18h 14m	18h 16m	18h 18m		
5 30	81	78	76	6 30	
6 0	84	80	78	6 0	
6 30	86 0.1	83 0.2	80 0.2	5 30	
7 0	88 0.3	85 0.3	82 0.3	5 0	
7 30	90 0.4	87 0.4	84 0.5	4 30	
8 0	93 0.6	89 0.6	86 0.6	4 0	
8 30	96 0.7	91 0.8	88 0.8	3 30	
9 0	99 0.9	94 1.0	90 1.1	3 0	
9 30	103 1.2	97 1.3	93 1.4	2 30	
9 45	105 1.3	99 1.4	95 1.5	2 15	
10 0	108 1.5	101 1.6	96 1.8	2 0	
10 15	111 1.6	104 1.9	98 2	1 45	
10 30	115 1.8	107 2.1	101 2.3	1 30	
10 45	119 2	112 2.4	104 2.7	1 15	
11 0	126 2.1	117 2.7	109 3.2	1 0	
11 15	134 2.1	125 2.9	116 3.8	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 21 N

MID-WINTER I LAT. 21 N

WINTER II LAT. 21 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	Nov 20 17	Nov 4 26	Oct 19 4	Nov 8 24	
	Sunrise 06h 32m	06h 38m	06h 29m		
	Sunset 17h 23m	17h 47m	17h 58m		
5 30	110 -0.2	103 -0.3	98 -0.3	6 30	
6 0	112 -0.1	106 -0.2	100 -0.1	6 0	
6 30	114	108	103	5 30	
7 0	117	111	105	5 0	
7 30	120 0.2	114 0.2	108 0.2	4 30	
8 0	124 0.2	117 0.3	112 0.3	4 0	
8 30	128 0.3	121 0.3	116 0.4	3 30	
9 0	133 0.4	126 0.4	120 0.5	3 0	
9 30	138 0.4	131 0.5	125 0.6	2 30	
9 45	142 0.4	134 0.5	129 0.6	2 15	
10 0	145 0.4	138 0.5	132 0.7	2 0	
10 15	149 0.4	141 0.5	136 0.7	1 45	
10 30	153 0.4	145 0.5	140 0.7	1 30	
10 45	157 0.3	149 0.5	144 0.6	1 15	
11 0	161 0.3	154 0.4	149 0.6	1 0	
11 15	166 0.2	159 0.4	155 0.5	12 45	
11 30	170 0.1	164 0.3	161 0.4	12 30	
11 45	175	169 0.2	167 0.3	12 15	
12 0	180	175	173 0.1	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	Feb 24 10	Mar 10 21	Mar 21 31	Mar 31	
	Sunrise 06h 18m	06h 08m	05h 58m		
	Sunset 18h 05m	18h 09m	18h 13m		
5 30	92 -0.2	88 -0.2	84 -0.1	6 30	
6 0	95	91	87	6 0	
6 30	97	93	89 0.1	5 30	
7 0	100 0.1	96 0.2	92 0.2	5 0	
7 30	103 0.3	99 0.3	95 0.4	4 30	
8 0	106 0.4	102 0.4	98 0.5	4 0	
8 30	110 0.5	106 0.6	101 0.7	3 30	
9 0	115 0.6	110 0.7	105 0.8	3 0	
9 30	120 0.7	115 0.9	110 1	2 30	
9 45	123 0.8	118 0.9	113 1.1	2 15	
10 0	126 0.8	122 1.0	117 1.2	2 0	
10 15	130 0.9	125 1.1	120 1.3	1 45	
10 30	135 0.9	130 1.1	125 1.3	1 30	
10 45	139 0.9	135 1.1	130 1.4	1 15	
11 0	145 0.8	141 1.1	137 1.4	1 0	
11 15	151 0.7	148 1	144 1.3	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	Mar 31 9	Apl 9 18	Apl 18 26	Apl 26	
	Sunrise 05h 50m	05h 41m	05h 35m		
	Sunset 18h 15m	18h 18m	18h 21m		
5 30	81	78	75	6 30	
6 0	84	81	78	6 0	
6 30	86 0.1	83 0.2	81 0.2	5 30	
7 0	89 0.3	86 0.3	83 0.3	5 0	
7 30	92 0.4	88 0.5	85 0.5	4 30	
8 0	95 0.6	91 0.6	88 0.6	4 0	
8 30	98 0.7	94 0.8	91 0.8	3 30	
9 0	102 0.9	97 1.0	94 1	3 0	
9 30	106 1.1	101 1.2	97 1.3	2 30	
9 45	109 1.2	104 1.4	99 1.5	2 15	
10 0	112 1.4	106 1.5	102 1.7	2 0	
10 15	116 1.5	110 1.7	104 1.9	1 45	
10 30	120 1.6	114 1.9	108 2.2	1 30	
10 45	125 1.7	119 2.1	113 2.4	1 15	
11 0	132 1.7	125 2.2	119 2.7	1 0	
11 15	140 1.6	134 2.2	127 2.9	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 24 N

MID-WINTER I LAT. 24 N

WINTER II LAT. 24 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	Solar Time
A.M. (Blue Scale)	Nov -- Jan	Nov -- Nov	Oct -- Nov	Nov -- Nov	P.M. (Red Scale)
	20 17	4 26	19 4	8 24	
	Sunrise 06h 38m	06h 42m	06h 33m		
	Sunset 17h 17m	17h 43m	17h 55m		
5 30	109 -0.3	103 -0.3	97 -0.3	6 30	
6 0	111 -0.2	105 -0.2	100 -0.1	6 0	
6 30	114	108	103	5 30	
7 0	117	111	106	5 0	
7 30	121 0.1	114 0.1	109 0.2	4 30	
8 0	124 0.2	118 0.2	113 0.3	4 0	
8 30	129 0.3	122 0.3	117 0.4	3 30	
9 0	134 0.3	127 0.4	122 0.5	3 0	
9 30	140 0.4	133 0.4	127 0.5	2 30	
9 45	143 0.4	136 0.4	130 0.6	2 15	
10 0	146 0.4	139 0.5	134 0.6	2 0	
10 15	150 0.3	143 0.5	138 0.6	1 45	
10 30	154 0.3	147 0.4	142 0.6	1 30	
10 45	158 0.3	151 0.4	146 0.6	1 15	
11 0	162 0.2	155 0.4	151 0.5	1 0	
11 15	166 0.2	160 0.3	156 0.4	12 45	
11 30	171 0.1	165 0.2	162 0.4	12 30	
11 45	176	170 0.2	168 0.2	12 15	
12 0	180	175	174 0.1	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	Solar Time
A.M. (Blue Scale)	Feb -- Mar	Sep -- Oct	Sep -- Sep	Sep -- Sep	P.M. (Red Scale)
	24 -- 10	10 21	21 31	21 31	
	Oct -- Oct	Sep -- Oct	Sep -- Sep	Sep -- Sep	
	5 19	23 5	13 23	5 19	
	Sunrise 06h 20m	06h 08m	05h 57m		
	Sunset 18h 03m	18h 09m	18h 13m		
5 30	91 -0.2	87 -0.2	84 -0.1	6 30	
6 0	94	90	87	6 0	
6 30	97	93	90 0.1	5 30	
7 0	101 0.1	97 0.2	93 0.2	5 0	
7 30	104 0.2	100 0.3	96 0.4	4 30	
8 0	108 0.4	103 0.4	100 0.5	4 0	
8 30	112 0.5	108 0.6	103 0.6	3 30	
9 0	116 0.6	112 0.7	108 0.8	3 0	
9 30	122 0.7	118 0.8	113 0.9	2 30	
9 45	125 0.7	121 0.9	117 1	2 15	
10 0	129 0.8	125 0.9	120 1.1	2 0	
10 15	133 0.8	129 0.9	124 1.1	1 45	
10 30	137 0.8	133 1.0	129 1.2	1 30	
10 45	142 0.7	138 0.9	134 1.2	1 15	
11 0	147 0.7	144 0.9	141 1.1	1 0	
11 15	153 0.6	151 0.8	148 1	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	Solar Time
A.M. (Blue Scale)	Mar -- Apl	Aug -- Sep	Aug -- Aug	Aug -- Aug	P.M. (Red Scale)
	31 -- 9	9 18	18 26	18 26	
	Sep -- Sep	Aug -- Sep	Aug -- Aug	Aug -- Aug	
	4 13	26 4	18 26	4 13	
	Sunrise 05h 48m	05h 39m	05h 32m		
	Sunset 18h 17m	18h 21m	18h 24m		
5 30	81	78	75	6 30	
6 0	84	81	78	6 0	
6 30	87 0.2	84 0.2	81 0.2	5 30	
7 0	90 0.3	87 0.3	84 0.3	5 0	
7 30	93 0.4	90 0.5	87 0.5	4 30	
8 0	96 0.5	93 0.6	90 0.6	4 0	
8 30	100 0.7	96 0.8	93 0.8	3 30	
9 0	104 0.9	100 1.0	97 1	3 0	
9 30	109 1.1	105 1.2	101 1.3	2 30	
9 45	112 1.1	108 1.3	104 1.4	2 15	
10 0	116 1.2	111 1.4	107 1.6	2 0	
10 15	120 1.3	115 1.6	110 1.8	1 45	
10 30	125 1.4	119 1.7	114 1.9	1 30	
10 45	130 1.4	125 1.8	120 2.1	1 15	
11 0	137 1.4	132 1.8	127 2.2	1 0	
11 15	145 1.3	141 1.7	136 2.2	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov	29	+12m			
Dec	7	+9m	Jan 17	-10m	Feb 8
"	15	+5m	Feb 8	-14m	Feb 24
"	23	+1m			
"	31	-3m	Nov 4	+16m	Oct 19
Jan	7	-6m	" 26	+13m	Nov 4
"	14	-9m			

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb	24	-13m	Mar 10	-10m	Mar 21	-7m
Mar	10	-10m	Mar 21	-7m	Mar 31	-4m
Oct	5	+12m	Sep 21	+7m	Sep 13	+4m
Oct	19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar	31	-4m	Apl 9	-1m	Apl 18	+1m
Apl	9	-1m	Apl 18	+1m	Apl 26	+2m
Sep	4	+1m	Aug 26	-2m	Aug 18	-4m
Sep	13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 27 N

MID-WINTER I LAT. 27 N

WINTER II LAT. 27 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M.	20 17	Nov -- Nov	Oct -- Nov		
(Blue Scale)		4 26	19 4		
	Sunrise 06h 44m	06h 47m	06h 36m		
	Sunset 17h 11m	17h 38m	17h 52m		
5 30	108 -0.3	102 -0.3	96 -0.3	6 30	
6 0	111 -0.2	105 -0.2	99 -0.2	6 0	
6 30	114	108	102	5 30	
7 0	117	111	106	5 0	
7 30	121 0.1	115 0.1	110 0.2	4 30	
8 0	125 0.2	119 0.2	114 0.3	4 0	
8 30	130 0.2	123 0.3	118 0.4	3 30	
9 0	135 0.3	128 0.3	123 0.4	3 0	
9 30	141 0.3	134 0.4	129 0.5	2 30	
9 45	144 0.3	137 0.4	132 0.5	2 15	
10 0	147 0.3	140 0.4	136 0.5	2 0	
10 15	151 0.3	144 0.4	139 0.5	1 45	
10 30	155 0.3	148 0.4	144 0.5	1 30	
10 45	159 0.2	152 0.4	148 0.5	1 15	
11 0	163 0.2	156 0.3	153 0.4	1 0	
11 15	167 0.2	161 0.3	158 0.4	12 45	
11 30	171 0.1	165 0.2	163 0.3	12 30	
11 45	176	170 0.1	168 0.2	12 15	
12 0	180	175	174 0.1	12 0	

		SUN'S AZIMUTH					
Solar Time	Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar		
A.M.	Time	24 -- 10	10 21	21 31			
(Blue Scale)		Oct -- Oct	Sep -- Oct	Sep -- Sep			
		5 19	23 5	13 23			
	Sunrise 06h 21m	06h 09m	05h 57m				
	Sunset 18h 02m	18h 08m	18h 14m				
5 30	91 -0.2	87 -0.2	83 -0.1	6 30	5 30		
6 0	94 -0.1	90	87	6 0	6 0		
6 30	97	94	90 0.1	5 30	6 30		
7 0	101 0.1	97 0.2	94 0.2	5 0	7 0		
7 30	105 0.2	101 0.3	97 0.4	4 30	7 30		
8 0	109 0.3	105 0.4	101 0.5	4 0	8 0		
8 30	113 0.4	109 0.5	105 0.6	3 30	8 30		
9 0	118 0.5	114 0.6	110 0.7	3 0	9 0		
9 30	124 0.6	120 0.7	116 0.9	2 30	9 30		
9 45	127 0.7	124 0.8	120 0.9	2 15	9 45		
10 0	131 0.7	127 0.8	123 1	2 0	10 0		
10 15	135 0.7	131 0.8	128 1	1 45	10 15		
10 30	139 0.7	136 0.8	132 1	1 30	10 30		
10 45	144 0.7	141 0.8	138 1	1 15	10 45		
11 0	150 0.6	147 0.8	144 1	1 0	11 0		
11 15	155 0.5	153 0.7	151 0.8	12 45	11 15		

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH					
Solar Time	Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl		
A.M.	Time	31 -- 9	9 18	18 26			
(Blue Scale)		Sep -- Sep	Aug -- Sep	Aug -- Aug			
		4 13	26 4	18 26			
	Sunrise 05h 47m	05h 36m	05h 29m				
	Sunset 18h 19m	18h 24m	18h 28m				
5 30	81	78	75	6 30	5 30		
6 0	84	81	79 0.1	6 0	6 0		
6 30	87 0.2	84 0.2	82 0.2	5 30	6 30		
7 0	91 0.3	88 0.3	85 0.3	5 0	7 0		
7 30	94 0.4	91 0.4	88 0.5	4 30	7 30		
8 0	98 0.5	94 0.6	92 0.6	4 0	8 0		
8 30	102 0.7	98 0.8	95 0.8	3 30	8 30		
9 0	107 0.8	103 0.9	100 1	3 0	9 0		
9 30	113 1	108 1.1	105 1.2	2 30	9 30		
9 45	116 1.1	112 1.2	108 1.3	2 15	9 45		
10 0	120 1.1	115 1.3	111 1.5	2 0	10 0		
10 15	124 1.2	119 1.4	115 1.6	1 45	10 15		
10 30	129 1.2	124 1.5	120 1.7	1 30	10 30		
10 45	135 1.2	130 1.5	126 1.8	1 15	10 45		
11 0	141 1.2	137 1.5	133 1.8	1 0	11 0		
11 15	149 1	146 1.3	142 1.6	12 45	11 15		

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov	29	+12m			
Dec	7	+9m	Jan 17	-10m	Feb 8 -14m
"	15	+5m	Feb 8	-14m	Feb 24 -13m
"	23	+1m			
"	31	-3m	Nov 4	+16m	Oct 19 +15m
Jan	7	-6m	" 26	+13m	Nov 4 +16m
"	14	-9m			

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb	24	-13m	Mar 10	-10m	Mar 21 -7m
Mar	10	-10m	Mar 21	-7m	Mar 31 -4m
Oct	5	+12m	Sep 21	+7m	Sep 13 +4m
Oct	19	+15m	Oct 5	+12m	Sep 23 +8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar	31	-4m	Apl 9	-1m	Apl 18 +1m
Apl	9	-1m	Apl 18	+1m	Apl 26 +2m
Sep	4	+1m	Aug 26	-2m	Aug 18 -4m
Sep	13	+4m	Sep 4	+1m	Aug 26 -2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 30 N

MID-WINTER I LAT. 30 N

WINTER II LAT. 30 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	20 17	Nov 4 06h 51m	Nov 26 06h 52m	Nov 4 06h 39m	
		Sunset 17h 04m	17h 33m	17h 49m	
5 30	107 -0.3	101 -0.3	95 -0.3	6 30	
6 0	110 -0.2	104 -0.2	99 -0.2	6 0	
6 30	114	108	102	5 30	
7 0	117	111	106	5 0	
7 30	121	115	110 0.1	4 30	
8 0	126 0.2	119 0.2	114 0.2	4 0	
8 30	130 0.2	124 0.3	119 0.3	3 30	
9 0	136 0.3	129 0.3	124 0.4	3 0	
9 30	142 0.3	135 0.3	130 0.4	2 30	
9 45	145 0.3	138 0.4	134 0.5	2 15	
10 0	148 0.3	142 0.4	137 0.5	2 0	
10 15	152 0.3	145 0.4	141 0.5	1 45	
10 30	155 0.2	149 0.3	145 0.5	1 30	
10 45	159 0.2	153 0.3	149 0.4	1 15	
11 0	163 0.2	157 0.3	154 0.4	1 0	
11 15	167 0.1	162 0.2	159 0.3	12 45	
11 30	172	166 0.2	164 0.3	12 30	
11 45	176	171 0.1	169 0.2	12 15	
12 0	180	175	174	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	24 10	10 21	21 31	31	
P.M. (Red Scale)	Oct 5 06h 23m	Oct 19 06h 09m	Oct 13 05h 56m	23	
	Sunset 18h 00m	18h 08m	18h 15m		
5 30	90 -0.2	86 -0.2	83 -0.1	6 30	
6 0	94 -0.1	90	87	6 0	
6 30	97	94	90 0.1	5 30	
7 0	101 0.1	98 0.2	94 0.2	5 0	
7 30	105 0.2	102 0.3	98 0.3	4 30	
8 0	110 0.3	106 0.4	102 0.5	4 0	
8 30	114 0.4	111 0.5	107 0.6	3 30	
9 0	120 0.5	116 0.6	113 0.7	3 0	
9 30	126 0.6	122 0.7	119 0.8	2 30	
9 45	129 0.6	126 0.7	122 0.9	2 15	
10 0	133 0.6	130 0.7	126 0.9	2 0	
10 15	137 0.6	134 0.8	131 0.9	1 45	
10 30	142 0.6	139 0.7	136 0.9	1 30	
10 45	146 0.6	144 0.7	141 0.9	1 15	
11 0	151 0.5	149 0.6	147 0.8	1 0	
11 15	157 0.4	155 0.6	154 0.7	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	31 9	9 18	18 26	26	
P.M. (Red Scale)	Sep 4 05h 45m	Sep 13 05h 33m	Sep 18 05h 25m	26	
	Sunset 18h 20m	18h 26m	18h 31m		
5 30	80	77	75	6 30	
6 0	84	81	79 0.1	6 0	
6 30	88 0.2	85 0.2	83 0.2	5 30	
7 0	91 0.3	88 0.3	86 0.4	5 0	
7 30	95 0.4	92 0.4	90 0.5	4 30	
8 0	100 0.5	96 0.6	94 0.6	4 0	
8 30	104 0.7	101 0.7	98 0.8	3 30	
9 0	109 0.8	106 0.9	103 1	3 0	
9 30	116 0.9	112 1.0	109 1.2	2 30	
9 45	119 1	115 1.1	112 1.2	2 15	
10 0	123 1	119 1.2	116 1.3	2 0	
10 15	128 1.1	124 1.3	120 1.4	1 45	
10 30	133 1.1	129 1.3	125 1.5	1 30	
10 45	138 1	135 1.3	131 1.5	1 15	
11 0	145 1	142 1.2	139 1.4	1 0	
11 15	152 0.8	150 1.0	147 1.3	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 33 N

MID-WINTER I LAT. 33 N

WINTER II LAT. 33 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M.	20 17	Nov -- Nov	Oct -- Nov	Oct -- Nov	
(Blue Scale)	Sunrise 06h 58m	06h 58m	06h 43m	06h 43m	
	Sunset 16h 57m	17h 27m	17h 45m	17h 45m	
5 30	106 -0.3	100 -0.3	94 -0.3	94 -0.3	
6 0	110 -0.2	103 -0.2	98 -0.2	98 -0.2	
6 30	113 -0.1	107 -0.1	102	102	
7 0	117	111	106	106	
7 30	122	115	110 0.1	110 0.1	
8 0	126 0.1	120 0.2	115 0.2	115 0.2	
8 30	131 0.2	125 0.2	120 0.3	120 0.3	
9 0	137 0.2	130 0.3	126 0.4	126 0.4	
9 30	143 0.2	136 0.3	132 0.4	132 0.4	
9 45	146 0.2	139 0.3	135 0.4	135 0.4	
10 0	149 0.2	143 0.3	139 0.4	139 0.4	
10 15	153 0.2	146 0.3	142 0.4	142 0.4	
10 30	156 0.2	150 0.3	146 0.4	146 0.4	
10 45	160 0.2	154 0.3	151 0.4	151 0.4	
11 0	164 0.2	158 0.2	155 0.3	155 0.3	
11 15	168 0.1	162 0.2	160 0.3	160 0.3	
11 30	172	167 0.2	165 0.2	165 0.2	
11 45	176	171 0.1	170 0.2	170 0.2	
12 0	180	176	175	175	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M.	Oct -- Oct	Sep -- Oct	Sep -- Sep	Sep -- Sep	
(Blue Scale)	Sunrise 06h 25m	06h 09m	05h 55m	05h 55m	
	Sunset 17h 58m	18h 08m	18h 16m	18h 16m	
5 30	89 -0.2	86 -0.2	83 -0.1	83 -0.1	
6 0	93 -0.1	90	87	87	
6 30	98	94	91 0.1	91 0.1	
7 0	102 0.1	98 0.2	95 0.2	95 0.2	
7 30	106 0.2	103 0.3	99 0.3	99 0.3	
8 0	111 0.3	107 0.4	104 0.4	104 0.4	
8 30	116 0.4	112 0.5	109 0.6	109 0.6	
9 0	121 0.5	118 0.6	115 0.7	115 0.7	
9 30	128 0.5	124 0.6	121 0.7	121 0.7	
9 45	131 0.5	128 0.7	125 0.8	125 0.8	
10 0	135 0.5	132 0.7	129 0.8	129 0.8	
10 15	139 0.5	136 0.7	133 0.8	133 0.8	
10 30	143 0.5	141 0.7	138 0.8	138 0.8	
10 45	148 0.5	146 0.6	144 0.8	144 0.8	
11 0	153 0.4	151 0.6	149 0.7	149 0.7	
11 15	158 0.4	157 0.5	156 0.6	156 0.6	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M.	Sep -- Sep	Aug -- Sep	Aug -- Aug	Aug -- Aug	
(Blue Scale)	Sunrise 05h 43m	05h 31m	05h 21m	05h 21m	
	Sunset 18h 22m	18h 29m	18h 35m	18h 35m	
5 30	80	77	75	75	
6 0	84	81	79 0.1	79 0.1	
6 30	88 0.2	85 0.2	83 0.2	83 0.2	
7 0	92 0.3	89 0.3	87 0.4	87 0.4	
7 30	97 0.4	94 0.4	91 0.5	91 0.5	
8 0	101 0.5	98 0.6	96 0.6	96 0.6	
8 30	106 0.6	103 0.7	100 0.8	100 0.8	
9 0	112 0.7	108 0.8	106 0.9	106 0.9	
9 30	118 0.9	115 1.0	112 1.1	112 1.1	
9 45	122 0.9	119 1.0	116 1.2	116 1.2	
10 0	126 0.9	123 1.1	120 1.2	120 1.2	
10 15	131 0.9	127 1.1	124 1.3	124 1.3	
10 30	136 0.9	133 1.1	130 1.3	130 1.3	
10 45	141 0.9	139 1.1	136 1.3	136 1.3	
11 0	148 0.8	145 1.0	143 1.2	143 1.2	
11 15	155 0.7	153 0.8	151 1	151 1	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m				
Dec 7	+9m	Jan 17	-10m	Feb 8	-14m
" 15	+5m	Feb 8	-14m	Feb 24	-13m
" 23	+1m				
" 31	-3m	Nov 4	+16m	Oct 19	+15m
Jan 7	-6m	" 26	+13m	Nov 4	+16m
" 14	-9m				

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 36 N

MID-WINTER I LAT. 36 N

WINTER II LAT. 36 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	Nov 20 17	Nov 4 26	Oct 19 4	Nov 4 26	
	Sunrise 07h 06m	07h 04m	06h 46m	07h 04m	
	Sunset 16h 49m	17h 22m	17h 41m	17h 22m	
5 30	105 -0.3	99 -0.3	93 -0.3	99 -0.3	
6 0	109 -0.2	103 -0.2	98 -0.2	103 -0.2	
6 30	113 -0.1	107 -0.1	102	107 -0.1	
7 0	117	111	106	111	
7 30	122	116	111 0.1	116	
8 0	127 0.1	120 0.1	116 0.2	120 0.1	
8 30	132 0.2	125 0.2	121 0.3	125 0.2	
9 0	137 0.2	131 0.2	127 0.3	131 0.2	
9 30	143 0.2	137 0.3	133 0.4	137 0.3	
9 45	146 0.2	140 0.3	136 0.4	140 0.3	
10 0	150 0.2	144 0.3	140 0.4	144 0.3	
10 15	153 0.2	147 0.3	144 0.4	147 0.3	
10 30	157 0.2	151 0.3	148 0.4	151 0.3	
10 45	161 0.2	155 0.2	152 0.3	155 0.2	
11 0	164 0.1	159 0.2	156 0.3	159 0.2	
11 15	168 0.1	163 0.2	161 0.2	163 0.2	
11 30	172	167 0.1	165 0.2	167 0.1	
11 45	176	171	170 0.1	171	
12 0	180	176	175	176	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	Feb 24 10	Mar 10 21	Mar 21 31	Mar 10 21	
	Sunrise 06h 27m	06h 10m	05h 54m	06h 27m	
	Sunset 17h 57m	18h 07m	18h 17m	17h 57m	
5 30	89 -0.2	85 -0.2	82	89 -0.2	
6 0	93 -0.1	90	87	93 -0.1	
6 30	98	94	91 0.1	98	
7 0	102	99 0.2	96 0.2	102	
7 30	107 0.2	103 0.3	100 0.3	107 0.2	
8 0	112 0.3	108 0.4	105 0.4	112 0.3	
8 30	117 0.4	114 0.4	111 0.5	117 0.4	
9 0	123 0.4	120 0.5	117 0.6	123 0.4	
9 30	129 0.5	126 0.6	123 0.7	129 0.5	
9 45	133 0.5	130 0.6	127 0.7	133 0.5	
10 0	137 0.5	134 0.6	131 0.7	137 0.5	
10 15	141 0.5	138 0.6	136 0.7	141 0.5	
10 30	145 0.5	143 0.6	141 0.7	145 0.5	
10 45	149 0.4	148 0.5	146 0.7	149 0.4	
11 0	154 0.4	153 0.5	151 0.6	154 0.4	
11 15	159 0.3	158 0.4	157 0.5	159 0.3	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	Mar 31 9	Apl 9 18	Apl 18 26	Mar 31 9	
	Sunrise 05h 41m	05h 27m	05h 17m	05h 41m	
	Sunset 18h 24m	18h 33m	18h 39m	18h 24m	
5 30	80	77	75	80	
6 0	84	82 0.1	80 0.1	84	
6 30	89 0.2	86 0.2	84 0.2	89 0.2	
7 0	93 0.3	90 0.3	88 0.4	93 0.3	
7 30	98 0.4	95 0.4	93 0.5	98 0.4	
8 0	103 0.5	100 0.6	97 0.6	103 0.5	
8 30	108 0.6	105 0.7	103 0.7	108 0.6	
9 0	114 0.7	111 0.8	108 0.9	114 0.7	
9 30	121 0.8	118 0.9	115 1	121 0.8	
9 45	125 0.8	122 0.9	119 1.1	125 0.8	
10 0	129 0.8	126 1.0	123 1.1	129 0.8	
10 15	134 0.8	131 1.0	128 1.1	134 0.8	
10 30	139 0.8	136 1.0	134 1.1	139 0.8	
10 45	144 0.8	142 0.9	140 1.1	144 0.8	
11 0	150 0.7	148 0.8	147 1	150 0.7	
11 15	157 0.6	155 0.7	154 0.8	157 0.6	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 39 N

MID-WINTER I LAT. 39 N

WINTER II LAT. 39 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M.	20 17	Nov -- Nov	Oct -- Nov		
(Blue Scale)	Sunrise 07h 14m	07h 10m	06h 50m		
	Sunset 16h 40m	17h 15m	17h 37m		
5 30	104 -0.4	98 -0.4	93 -0.3	6 30	
6 0	108 -0.2	102 -0.2	97 -0.2	6 0	
6 30	113 -0.1	106 -0.1	102	5 30	
7 0	117	111	106	5 0	
7 30	122	116	111	4 30	
8 0	127	121 0.1	116 0.2	4 0	
8 30	132 0.1	126 0.2	122 0.2	3 30	
9 0	138 0.2	132 0.2	128 0.3	3 0	
9 30	144 0.2	138 0.2	134 0.3	2 30	
9 45	147 0.2	141 0.2	137 0.3	2 15	
10 0	150 0.2	145 0.2	141 0.3	2 0	
10 15	154 0.2	148 0.2	145 0.3	1 45	
10 30	157 0.2	152 0.2	149 0.3	1 30	
10 45	161 0.1	156 0.2	153 0.3	1 15	
11 0	165 0.1	159 0.2	157 0.3	1 0	
11 15	168	163 0.2	161 0.2	12 45	
11 30	172	168 0.1	166 0.2	12 30	
11 45	176	172	170 0.1	12 15	
12 0	180	176	175	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M.	Oct -- Oct	Sep -- Oct	Sep -- Sep		
(Blue Scale)	Sunrise 06h 29m	06h 10m	05h 53m		
	Sunset 17h 55m	18h 07m	18h 18m		
5 30	88 -0.2	85 -0.2	82	6 30	
6 0	93 -0.1	90	87	6 0	
6 30	97	94	91 0.1	5 30	
7 0	102	99 0.1	96 0.2	5 0	
7 30	107 0.2	104 0.2	101 0.3	4 30	
8 0	112 0.3	109 0.3	106 0.4	4 0	
8 30	118 0.3	115 0.4	112 0.5	3 30	
9 0	124 0.4	121 0.5	118 0.6	3 0	
9 30	131 0.4	128 0.5	126 0.6	2 30	
9 45	134 0.4	132 0.5	129 0.6	2 15	
10 0	138 0.4	136 0.5	134 0.6	2 0	
10 15	142 0.4	140 0.5	138 0.6	1 45	
10 30	146 0.4	145 0.5	143 0.6	1 30	
10 45	151 0.4	149 0.5	148 0.6	1 15	
11 0	155 0.3	154 0.4	153 0.5	1 0	
11 15	160 0.3	159 0.3	159 0.4	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M.	Sep -- Sep	Aug -- Sep	Aug -- Aug		
(Blue Scale)	Sunrise 05h 39m	05h 24m	05h 13m		
	Sunset 18h 26m	18h 36m	18h 44m		
5 30	80	77	75	6 30	
6 0	84	82 0.1	80 0.1	6 0	
6 30	89 0.2	87 0.2	85 0.2	5 30	
7 0	94 0.3	91 0.3	89 0.4	5 0	
7 30	99 0.4	96 0.4	94 0.5	4 30	
8 0	104 0.5	101 0.5	99 0.6	4 0	
8 30	110 0.6	107 0.6	105 0.7	3 30	
9 0	116 0.7	113 0.8	111 0.8	3 0	
9 30	123 0.7	121 0.8	118 0.9	2 30	
9 45	127 0.7	125 0.9	122 1	2 15	
10 0	131 0.8	129 0.9	127 1	2 0	
10 15	136 0.7	134 0.9	132 1	1 45	
10 30	141 0.7	139 0.8	137 1	1 30	
10 45	146 0.7	145 0.8	143 0.9	1 15	
11 0	152 0.6	151 0.7	150 0.8	1 0	
11 15	158 0.5	157 0.6	157 0.7	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 42 N

MID-WINTER I LAT. 42 N

WINTER II LAT. 42 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb	
A.M.	20 17	Nov 17 8	Nov 8 24	Nov 8 24	
(Blue Scale)		Nov 4 26	Nov 19 4	Nov 19 4	
	Sunrise 07h 24m	07h 17m	06h 55m		
	Sunset 16h 31m	17h 08m	17h 33m		
5 30	103 -0.4	97 -0.4	92 -0.3	6 30	
6 0	108 -0.3	101 -0.3	97 -0.2	6 0	
6 30	112 -0.2	106 -0.2	101	5 30	
7 0	117	111	106	5 0	
7 30	122	116	112	4 30	
8 0	127	121	117 0.2	4 0	
8 30	133 0.1	127 0.1	122 0.2	3 30	
9 0	138 0.1	132 0.2	129 0.3	3 0	
9 30	144 0.2	139 0.2	135 0.3	2 30	
9 45	148 0.2	142 0.2	138 0.3	2 15	
10 0	151 0.2	145 0.2	142 0.3	2 0	
10 15	154 0.1	149 0.2	146 0.3	1 45	
10 30	158 0.1	152 0.2	150 0.3	1 30	
10 45	161 0.1	156 0.2	154 0.3	1 15	
11 0	165	160 0.2	158 0.2	1 0	
11 15	169	164 0.1	162 0.2	12 45	
11 30	173	168 0.1	166 0.1	12 30	
11 45	176	172	171	12 15	
12 0	180	176	175	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M.	24 -- 10	10 21	21 31	21 31	
(Blue Scale)		Oct 5 19	Oct 23 5	Oct 13 23	
	Sunrise 06h 31m	06h 11m	05h 52m		
	Sunset 17h 52m	18h 06m	18h 19m		
5 30	87 -0.2	84 -0.1	82	6 30	
6 0	92 -0.1	89	87	6 0	
6 30	97	94	92 0.1	5 30	
7 0	102	100 0.1	97 0.2	5 0	
7 30	108 0.2	105 0.2	102 0.3	4 30	
8 0	113 0.2	110 0.3	108 0.4	4 0	
8 30	119 0.3	116 0.4	114 0.5	3 30	
9 0	125 0.4	123 0.4	120 0.5	3 0	
9 30	132 0.4	130 0.5	127 0.6	2 30	
9 45	136 0.4	133 0.5	131 0.6	2 15	
10 0	139 0.4	137 0.5	135 0.6	2 0	
10 15	143 0.4	142 0.5	140 0.6	1 45	
10 30	148 0.4	146 0.4	145 0.5	1 30	
10 45	152 0.3	151 0.4	149 0.5	1 15	
11 0	156 0.3	155 0.4	155 0.4	1 0	
11 15	161 0.2	160 0.3	160 0.4	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M.	31 -- 9	9 18	18 26	18 26	
(Blue Scale)		Sep 4 13	Aug 26 4	Aug 18 26	
	Sunrise 05h 37m	05h 20m	05h 08m		
	Sunset 18h 29m	18h 40m	18h 49m		
5 30	80	77	76	6 30	
6 0	85	82 0.1	80 0.2	6 0	
6 30	90 0.2	87 0.2	85 0.3	5 30	
7 0	95 0.3	92 0.3	90 0.4	5 0	
7 30	100 0.4	97 0.4	96 0.5	4 30	
8 0	106 0.4	103 0.5	101 0.6	4 0	
8 30	111 0.5	109 0.6	107 0.7	3 30	
9 0	118 0.6	116 0.7	114 0.8	3 0	
9 30	125 0.7	123 0.8	121 0.9	2 30	
9 45	129 0.7	127 0.8	125 0.9	2 15	
10 0	134 0.7	132 0.8	130 0.9	2 0	
10 15	138 0.7	136 0.8	135 0.9	1 45	
10 30	143 0.6	142 0.7	140 0.8	1 30	
10 45	148 0.6	147 0.7	146 0.8	1 15	
11 0	154 0.5	153 0.6	152 0.7	1 0	
11 15	160 0.4	159 0.5	159 0.5	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m
Dec 7	+9m
" 15	+5m
" 23	+1m
" 31	-3m
Jan 7	-6m
" 14	-9m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 45 N

MID-WINTER I LAT. 45 N

WINTER II LAT. 45 N

SPRING & AUTUMN III

		SUN'S AZIMUTH			
Solar Time	Nov -- Jan	Jan -- Feb	Feb -- Feb	Feb -- Feb	
A.M. (Blue Scale)	Nov 20 17	Nov 4 26	Oct 19 4	Nov 4 26	
	Sunrise 07h 34m	07h 24m	07h 00m		
	Sunset 16h 20m	17h 01m	17h 28m		
5 30	102 -0.4	95 -0.4	91 -0.3	6 30	
6 0	107 -0.3	101 -0.3	96 -0.2	6 0	
6 30	112 -0.2	106 -0.2	101 -0.1	5 30	
7 0	117 -0.1	111	106	5 0	
7 30	122	116	112	4 30	
8 0	127	121	117 0.1	4 0	
8 30	133	127 0.1	123 0.2	3 30	
9 0	139 0.1	133 0.2	129 0.2	3 0	
9 30	145 0.1	139 0.2	136 0.3	2 30	
9 45	148 0.1	143 0.2	139 0.3	2 15	
10 0	151 0.1	146 0.2	143 0.3	2 0	
10 15	155 0.1	149 0.2	147 0.3	1 45	
10 30	158 0.1	153 0.2	150 0.2	1 30	
10 45	162	157 0.2	154 0.2	1 15	
11 0	165	160 0.1	158 0.2	1 0	
11 15	169	164 0.1	163 0.2	12 45	
11 30	173	168	167 0.1	12 30	
11 45	176	172	171	12 15	
12 0	180	176	175	12 0	

		SUN'S AZIMUTH			
Solar Time	Feb -- Mar	Mar -- Mar	Mar -- Mar	Mar -- Mar	
A.M. (Blue Scale)	Feb 24 10	Mar 10 21	Mar 21 31	Mar 21 31	
	Sunrise 06h 33m	06h 11m	05h 51m		
	Sunset 17h 50m	18h 06m	18h 20m		
5 30	87 -0.2	84 -0.1	81	6 30	
6 0	92 -0.1	89	87	6 0	
6 30	97	95	92 0.1	5 30	
7 0	103	100 0.1	97 0.2	5 0	
7 30	108 0.1	105 0.2	103 0.3	4 30	
8 0	114 0.2	111 0.3	109 0.4	4 0	
8 30	120 0.3	117 0.4	115 0.4	3 30	
9 0	126 0.3	124 0.4	122 0.5	3 0	
9 30	133 0.3	131 0.4	129 0.5	2 30	
9 45	137 0.4	135 0.4	133 0.5	2 15	
10 0	141 0.3	139 0.4	137 0.5	2 0	
10 15	145 0.3	143 0.4	142 0.5	1 45	
10 30	149 0.3	147 0.4	146 0.5	1 30	
10 45	153 0.3	152 0.4	151 0.4	1 15	
11 0	157 0.3	157 0.3	156 0.4	1 0	
11 15	162 0.2	161 0.3	161 0.3	12 45	

Compass Inaccurate between 11:15am and 12:45pm

		SUN'S AZIMUTH			
Solar Time	Mar -- Apl	Apl -- Apl	Apl -- Apl	Apl -- Apl	
A.M. (Blue Scale)	Mar 31 9	Apl 9 18	Apl 18 26	Apl 18 26	
	Sunrise 05h 34m	05h 16m	05h 02m		
	Sunset 18h 32m	18h 44m	18h 54m		
5 30	80	77	76	6 30	
6 0	85	83 0.1	81 0.2	6 0	
6 30	90 0.2	88 0.2	86 0.3	5 30	
7 0	95 0.2	93 0.3	91 0.4	5 0	
7 30	101 0.3	99 0.4	97 0.5	4 30	
8 0	107 0.4	105 0.5	103 0.6	4 0	
8 30	113 0.5	111 0.6	109 0.6	3 30	
9 0	120 0.6	118 0.7	116 0.7	3 0	
9 30	127 0.6	125 0.7	124 0.8	2 30	
9 45	131 0.6	130 0.7	128 0.8	2 15	
10 0	136 0.6	134 0.7	132 0.8	2 0	
10 15	140 0.6	139 0.7	137 0.8	1 45	
10 30	145 0.5	144 0.6	142 0.7	1 30	
10 45	150 0.5	149 0.6	148 0.7	1 15	
11 0	155 0.4	155 0.5	154 0.6	1 0	
11 15	161 0.3	161 0.4	160 0.5	12 45	

Compass Inaccurate between 11:15am and 12:45pm

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Nov 29	+12m				
Dec 7	+9m	Jan 17	-10m	Feb 8	-14m
" 15	+5m	Feb 8	-14m	Feb 24	-13m
" 23	+1m				
" 31	-3m	Nov 4	+16m	Oct 19	+15m
Jan 7	-6m	" 26	+13m	Nov 4	+16m
" 14	-9m				

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Feb 24	-13m	Mar 10	-10m	Mar 21	-7m
Mar 10	-10m	Mar 21	-7m	Mar 31	-4m
Oct 5	+12m	Sep 21	+7m	Sep 13	+4m
Oct 19	+15m	Oct 5	+12m	Sep 23	+8m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Mar 31	-4m	Apl 9	-1m	Apl 18	+1m
Apl 9	-1m	Apl 18	+1m	Apl 26	+2m
Sep 4	+1m	Aug 26	-2m	Aug 18	-4m
Sep 13	+4m	Sep 4	+1m	Aug 26	-2m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 12 N

SUMMER IV LAT. 12 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 05h 41m	05h 38m	05h 38m	05h 36m	05h 36m	05h 36m	
	Sunset 18h 13m	18h 14m	18h 14m	18h 16m	18h 16m	18h 16m	
5 30	74	72	72	70	70	70	
6 0	75	73	73	71	71	71	
6 30	77 0.2	75 0.2	75 0.2	73 0.2	73 0.2	73 0.2	
7 0	78 0.3	76 0.3	76 0.3	74 0.3	74 0.3	74 0.3	
7 30	79 0.5	77 0.5	77 0.5	74 0.5	74 0.5	74 0.5	
8 0	80 0.6	77 0.6	77 0.6	75 0.6	75 0.6	75 0.6	
8 30	80 0.8	78 0.8	78 0.8	75 0.8	75 0.8	75 0.8	
9 0	81 1.1	78 1.1	78 1.1	75 1.1	75 1.1	75 1.1	
9 30	81 1.4	77 1.4	77 1.4	74 1.4	74 1.4	74 1.4	
9 45	81 1.6	77 1.6	77 1.6	73 1.6	73 1.6	73 1.6	
10 0	81 1.8	77 1.8	77 1.8	72 1.8	72 1.8	72 1.8	
10 15	80 2.1	76 2.1	76 2.1	71 2.1	71 2.1	71 2.1	
10 30	80 2.6	74 2.5	74 2.5	69 2.4	69 2.4	69 2.4	
10 45	79 3.1	72 3.1	72 3.1	66 2.9	66 2.9	66 2.9	
11 0	77 4.0	69 3.9	69 3.9	61 3.5	61 3.5	61 3.5	
11 15	74 5.4	63 5.1	63 5.1	54 4.4	54 4.4	54 4.4	
11 30	67 8.2	52 7.0	52 7.0	42 5.3	42 5.3	42 5.3	
11 45	47 15.9	30 9.1	30 9.1	21 4.5	21 4.5	21 4.5	
12 0	346 -33.9	350 -5.1	350 -5.1	352 -1.8	352 -1.8	352 -1.8	

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June --	July	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10	4	10	
	Sunrise 05h 34m	05h 34m	05h 34m	05h 34m	05h 37m	05h 37m	
	Sunset 18h 18m	18h 21m	18h 21m	18h 21m	18h 27m	18h 27m	
5 30	68	67	67	65	65	65	
6 0	70	68	68	66	66	66	
6 30	71 0.2	69 0.2	69 0.2	68 0.2	68 0.2	68 0.2	
7 0	72 0.3	70 0.3	70 0.3	68 0.3	68 0.3	68 0.3	
7 30	72 0.5	71 0.5	71 0.5	69 0.4	69 0.4	69 0.4	
8 0	73 0.6	71 0.6	71 0.6	69 0.6	69 0.6	69 0.6	
8 30	73 0.8	71 0.8	71 0.8	69 0.8	69 0.8	69 0.8	
9 0	72 1	70 1.0	70 1.0	68 1	68 1	68 1	
9 30	71 1.3	69 1.3	69 1.3	67 1.2	67 1.2	67 1.2	
9 45	70 1.5	67 1.5	67 1.5	65 1.4	65 1.4	65 1.4	
10 0	69 1.7	66 1.7	66 1.7	64 1.6	64 1.6	64 1.6	
10 15	67 2	64 1.9	64 1.9	62 1.8	62 1.8	62 1.8	
10 30	64 2.3	61 2.2	61 2.2	59 2	59 2	59 2	
10 45	61 2.7	57 2.5	57 2.5	55 2.3	55 2.3	55 2.3	
11 0	56 3.2	52 2.9	52 2.9	50 2.5	50 2.5	50 2.5	
11 15	48 3.7	44 3.2	44 3.2	42 2.7	42 2.7	42 2.7	
11 30	36 4	32 3.2	32 3.2	32 2.7	32 2.7	32 2.7	
11 45	17 2.8	16 2.1	16 2.1	19 2	19 2	19 2	
12 0	354 -0.9	357 -0.4	357 -0.4	2 0.3	2 0.3	2 0.3	

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

5 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

5 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

5 0 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

3 0

3 0

2 30

2 15

2 0

1 45

1 30

1 15

1 0

12 45

12 30

12 15

12 0

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

I For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 15 N

SUMMER IV LAT. 15 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 05h 37m		05h 34m		05h 31m		
	Sunset 18h 17m		18h 18m		18h 21m		
5 30	74		72		70		
6 0	76		74		72 0.1		
6 30	77 0.2		75 0.2		73 0.2		
7 0	79 0.3		77 0.3		75 0.4		
7 30	80 0.5		78 0.5		76 0.5		
8 0	82 0.6		79 0.7		77 0.7		
8 30	83 0.8		80 0.8		77 0.9		
9 0	84 1.1		81 1.1		78 1.1		
9 30	85 1.4		82 1.4		78 1.4		
9 45	86 1.6		82 1.6		78 1.6		
10 0	86 1.9		82 1.9		78 1.9		
10 15	87 2.2		82 2.2		77 2.2		
10 30	88 2.6		82 2.6		76 2.6		
10 45	88 3.2		81 3.2		74 3.2		
11 0	89 4.0		80 4.1		72 4		
11 15	90 5.4		78 5.6		67 5.4		
11 30	91 8		73 8.8		57 7.9		
11 45	95 14.1		57 18.8		35 12.6		
12 0	244 -17.9		335 -40.7		347 -11.3		

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10			
	Sunrise 05h 30m		05h 29m		05h 31m		
	Sunset 18h 23m		18h 26m		18h 32m		
5 30	68		67		65		
6 0	70 0.1		68 0-Jan		67		
6 30	71 0.2		70 0.2		68 0.2		
7 0	73 0.4		71 0.3		69 0.3		
7 30	74 0.5		72 0.5		70 0.5		
8 0	75 0.7		73 0.6		71 0.6		
8 30	75 0.8		73 0.8		71 0.8		
9 0	75 1.1		73 1.1		71 1		
9 30	75 1.4		73 1.4		70 1.3		
9 45	75 1.6		72 1.6		70 1.5		
10 0	74 1.8		71 1.8		68 1.7		
10 15	73 2.1		70 2.1		67 1.9		
10 30	71 2.5		68 2.4		65 2.2		
10 45	69 3		65 2.9		62 2.6		
11 0	65 3.8		60 3.5		57 3.1		
11 15	59 4.8		53 4.2		51 3.6		
11 30	48 6.3		42 5.0		40 4		
11 45	26 6.9		22 4.5		24 3.6		
12 0	352 -3		355 -1		3	0.6	

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

6 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

6 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

5 30 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

5 0

4 30

4 0

3 30

3 0

2 30

2 15

2 0

1 45

1 30

1 15

1 0

12 45

12 30

12 15

12 0

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 18 N

SUMMER IV LAT. 18 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	Solar Time
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	P.M. (Red Scale)
	Sunrise 05h 34m		05h 30m		05h 27m		
	Sunset 18h 20m		18h 22m		18h 25m		
5 30	73		72		70		6 30
6 0	76		74 0.1		72 0.1		6 0
6 30	78 0.2		76 0.2		74 0.2		5 30
7 0	80 0.3		78 0.4		76 0.4		5 0
7 30	82 0.5		79 0.5		77 0.5		4 30
8 0	83 0.7		81 0.7		79 0.7		4 0
8 30	85 0.8		83 0.9		80 0.9		3 30
9 0	87 1.1		84 1.1		81 1.1		3 0
9 30	89 1.4		86 1.4		82 1.4		2 30
9 45	91 1.6		87 1.6		83 1.7		2 15
10 0	92 1.8		88 1.9		83 1.9		2 0
10 15	93 2.1		89 2.2		84 2.2		1 45
10 30	95 2.5		90 2.6		84 2.7		1 30
10 45	98 3.0		91 3.2		84 3.3		1 15
11 0	101 3.7		93 4.0		84 4.2		1 0
11 15	106 4.6		95 5.3		83 5.7		12 45
11 30	115 5.7		100 7.6		81 8.9		12 30
11 45	137 5.6		113 10.9		72 18.7		12 15
12 0	191 -1.7		212 -7.4		313 -37.3		12 0

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	Solar Time
A.M. (Blue Scale)	July 27	July 19	July 19	July 10			P.M. (Red Scale)
	Sunrise 05h 25m		05h 23m		05h 25m		
	Sunset 18h 28m		18h 31m		18h 38m		
5 30	68		67		65		6 30
6 0	70 0.1		69 0-Jan		67 0.1		6 0
6 30	72 0.2		71 0.2		69 0.2		5 30
7 0	74 0.4		72 0.4		70 0.4		5 0
7 30	75 0.5		74 0.5		72 0.5		4 30
8 0	77 0.7		75 0.7		73 0.6		4 0
8 30	78 0.9		76 0.9		74 0.8		3 30
9 0	79 1.1		76 1.1		74 1.1		3 0
9 30	79 1.4		77 1.4		74 1.4		2 30
9 45	79 1.7		77 1.6		74 1.6		2 15
10 0	79 1.9		76 1.9		73 1.8		2 0
10 15	79 2.2		76 2.2		73 2.1		1 45
10 30	79 2.7		75 2.6		71 2.4		1 30
10 45	78 3.3		73 3.2		69 2.9		1 15
11 0	77 4.2		71 4.0		66 3.6		1 0
11 15	73 5.7		66 5.3		61 4.5		12 45
11 30	67 8.7		57 7.5		52 5.9		12 30
11 45	47 17.4		36 11.4		35 7.3		12 15
12 0	343 -34.9		352 -6.5		5 2.1		12 0

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

2 0 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

12 45 The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

12 30 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

12 15 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

12 0 -

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 21 N

SUMMER IV LAT. 21 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl -- May	May -- May	May -- May	May -- May	May -- May	May -- May	
A.M. (Blue Scale)	26 2	2 10	10 18	18 27	27 4	4	
	Aug -- Aug	Aug -- Aug	July -- Aug	July -- Aug	July -- Aug	July -- Aug	
	12 18	4 12	27 4	27 4	27 4	27 4	
	Sunrise 05h 30m	05h 26m	05h 22m	05h 19m	05h 18m	05h 19m	
	Sunset 18h 24m	18h 26m	18h 30m	18h 33m	18h 37m	18h 44m	
5 30	73	72	70	68	67	65	
6 0	76 0.1	74 0.1	72 0.1	71 0.1	69 0-Jan	67 0.1	
6 30	78 0.2	77 0.2	75 0.3	73 0.3	71 0.3	70 0.2	
7 0	81 0.4	79 0.4	77 0.4	75 0.4	73 0.4	71 0.4	
7 30	83 0.5	81 0.5	79 0.5	77 0.5	75 0.5	73 0.5	
8 0	85 0.7	83 0.7	81 0.7	79 0.7	77 0.7	75 0.7	
8 30	88 0.9	85 0.9	83 0.9	80 0.9	78 0.9	76 0.9	
9 0	90 1.1	88 1.1	85 1.1	82 1.1	80 1.1	77 1.1	
9 30	94 1.4	90 1.4	87 1.5	84 1.5	81 1.5	78 1.4	
9 45	95 1.6	92 1.6	88 1.7	84 1.7	81 1.7	79 1.6	
10 0	97 1.8	93 1.9	89 1.9	85 1.9	82 1.9	79 1.9	
10 15	100 2.0	95 2.2	90 2.2	86 2.3	82 2.3	79 2.2	
10 30	103 2.4	98 2.5	92 2.7	87 2.7	83 2.7	79 2.6	
10 45	107 2.7	101 3.0	94 3.2	88 3.3	83 3.3	78 3.1	
11 0	112 3.2	105 3.6	96 4	89 4.2	83 4.2	77 3.9	
11 15	120 3.6	111 4.4	100 5.2	90 5.6	82 5.7	75 5.1	
11 30	133 3.7	122 5.0	108 6.9	93 8.3	79 8.7	70 7.5	
11 45	154 2.5	146 4.1	128 7.9	99 14.1	70 17.6	57 13.2	
12 0	185 -0.6	190 -1.5	201 -4	238 -15.4	333 -46.3	11 42.6	

		SUN'S AZIMUTH					
Solar Time	May -- May	May -- May	May -- May	May -- May	May -- May	May -- May	
A.M. (Blue Scale)	18 25	10 21	June -- July	June -- July	June -- July	June -- July	
P.M. (Red Scale)	July -- July	July -- July	4 10	4 10	4 10	4 10	
	27 19	19 10	4 10	4 10	4 10	4 10	
	Sunrise 05h 19m	05h 18m	05h 19m	05h 19m	05h 19m	05h 19m	
	Sunset 18h 33m	18h 37m	18h 44m	18h 44m	18h 44m	18h 44m	
5 30	68	67	65	65	65	65	
6 0	71 0.1	69 0-Jan	67 0.1	67 0.1	67 0.1	67 0.1	
6 30	73 0.3	71 0.3	70 0.2	70 0.2	70 0.2	70 0.2	
7 0	75 0.4	73 0.4	71 0.4	71 0.4	71 0.4	71 0.4	
7 30	77 0.5	75 0.5	73 0.5	73 0.5	73 0.5	73 0.5	
8 0	79 0.7	77 0.7	75 0.7	75 0.7	75 0.7	75 0.7	
8 30	80 0.9	78 0.9	76 0.9	76 0.9	76 0.9	76 0.9	
9 0	82 1.1	80 1.1	77 1.1	77 1.1	77 1.1	77 1.1	
9 30	84 1.5	81 1.5	78 1.4	78 1.4	78 1.4	78 1.4	
9 45	84 1.7	81 1.7	79 1.6	79 1.6	79 1.6	79 1.6	
10 0	85 1.9	82 1.9	79 1.9	79 1.9	79 1.9	79 1.9	
10 15	86 2.3	82 2.3	79 2.2	79 2.2	79 2.2	79 2.2	
10 30	87 2.7	83 2.7	79 2.6	79 2.6	79 2.6	79 2.6	
10 45	88 3.3	83 3.3	78 3.1	78 3.1	78 3.1	78 3.1	
11 0	89 4.2	83 4.2	77 3.9	77 3.9	77 3.9	77 3.9	
11 15	90 5.6	82 5.7	75 5.1	75 5.1	75 5.1	75 5.1	
11 30	93 8.3	79 8.7	70 7.5	70 7.5	70 7.5	70 7.5	
11 45	99 14.1	70 17.6	57 13.2	57 13.2	57 13.2	57 13.2	
12 0	238 -15.4	333 -46.3	11 42.6	11 42.6	11 42.6	11 42.6	

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

2 0 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

12 30 The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

12 15 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

12 0 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl	26	+2m	May	2	+3m	May	10	+4m
May	2	+3m	May	10	+4m	May	18	+4m
Aug	12	-5m	Aug	4	-6m	July	27	-7m
Aug	18	-4m	Aug	12	-5m	Aug	4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May	18	+4m	May	26	+3m	June	4	+2m
May	26	+3m	June	4	+2m	June	22	-2m
July	27	=7m	July	19	-6m	June	22	-2m
July	19	=6m	July	10	-5m	July	10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 24 N

SUMMER IV LAT. 24 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl -- May	May -- May	May -- May	May -- May	May -- May	May -- May	
A.M. (Blue Scale)	26 -- 2	2 -- 10	10 -- 18	18 -- 27	27 -- 4	4 -- 18	
5 30	Sunrise 05h 26m Sunset 18h 28m	05h 22m 18h 31m	05h 17m 18h 35m	73	72	70	
6 0	76 0.1	75 0.1	73 0.1	79 0.2	77 0.3	75 0.3	
6 30	79 0.2	77 0.3	75 0.3	82 0.4	80 0.4	78 0.4	
7 0	82 0.4	80 0.4	78 0.4	85 0.5	82 0.5	80 0.5	
7 30	85 0.5	82 0.5	80 0.5	87 0.7	85 0.7	83 0.7	
8 0	87 0.7	85 0.7	83 0.7	90 0.9	88 0.9	85 0.9	
8 30	90 0.9	88 0.9	85 0.9	94 1.1	91 1.1	88 1.1	
9 0	94 1.1	91 1.1	88 1.1	98 1.3	94 1.4	91 1.5	
9 30	98 1.3	94 1.4	91 1.5	100 1.5	97 1.6	93 1.7	
9 45	100 1.5	97 1.6	93 1.7	103 1.7	99 1.8	95 1.9	
10 0	103 1.7	99 1.8	95 1.9	106 1.9	102 2.0	97 2.2	
10 15	106 1.9	102 2.0	97 2.2	110 2.1	105 2.3	100 2.5	
10 30	110 2.1	105 2.3	100 2.5	115 2.4	110 2.7	103 2.9	
10 45	115 2.4	110 2.7	103 2.9	122 2.6	116 3.0	108 3.5	
11 0	122 2.6	116 3.0	108 3.5	131 2.7	124 3.3	116 4.1	
11 15	131 2.7	124 3.3	116 4.1	144 2.4	138 3.2	129 4.4	
11 30	144 2.4	138 3.2	129 4.4	162 1.4	158 1.9	152 3.1	
11 45	162 1.4	158 1.9	152 3.1	183 -0.3	186 -0.6	189 -1.1	
12 0	183 -0.3	186 -0.6	189 -1.1				

		SUN'S AZIMUTH					
Solar Time	May -- May	Mar -- Mar	Mar -- Mar	June -- July	June -- July	June -- July	
A.M. (Blue Scale)	18 -- 25	10 -- 21	10 -- 21	4 -- 10	4 -- 10	4 -- 10	
5 30	Sunrise 05h 14m Sunset 18h 39m	05h 12m 18h 43m	05h 13m 18h 50m	68	67	65	
6 0	71 0.2	69 0-Jan	68 0.2	74 0.3	72 0.3	70 0.3	
6 30	74 0.3	72 0.3	70 0.3	76 0.4	74 0.4	73 0.4	
7 0	76 0.4	74 0.4	73 0.4	78 0.5	77 0.5	75 0.5	
7 30	78 0.5	77 0.5	75 0.5	81 0.7	79 0.7	77 0.7	
8 0	81 0.7	79 0.7	77 0.7	83 0.9	81 0.9	79 0.9	
8 30	83 0.9	81 0.9	79 0.9	85 1.2	83 1.2	81 1.1	
9 0	85 1.2	83 1.2	81 1.1	88 1.5	85 1.5	83 1.4	
9 30	88 1.5	85 1.5	83 1.4	89 1.7	86 1.7	83 1.6	
9 45	89 1.7	86 1.7	83 1.6	91 1.9	88 2.0	84 1.9	
10 0	91 1.9	88 2.0	84 1.9	93 2.2	89 2.3	85 2.2	
10 15	93 2.2	89 2.3	85 2.2	95 2.6	91 2.7	86 2.6	
10 30	95 2.6	91 2.7	86 2.6	98 3.1	93 3.2	87 3.1	
10 45	98 3.1	93 3.2	87 3.1	102 3.8	95 4.0	89 3.9	
11 0	102 3.8	95 4.0	89 3.9	107 4.7	99 5.2	90 5.1	
11 15	107 4.7	99 5.2	90 5.1	118 5.7	105 7.0	92 7.2	
11 30	118 5.7	105 7.0	92 7.2	141 5.1	123 8.6	97 11.4	
11 45	141 5.1	123 8.6	97 11.4	192 -1.9	194 -2.9	139 11	
12 0	192 -1.9	194 -2.9	139 11				

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

6 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

6 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

5 30 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

5 0

4 30

4 0

3 30

3 0

2 30

2 15

2 0

1 45

1 30

1 15

1 0

12 45

12 30

12 15

12 0

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl	26	+2m	May	2	+3m	May	10	+4m
May	2	+3m	May	10	+4m	May	18	+4m
Aug	12	-5m	Aug	4	-6m	July	27	-7m
Aug	18	-4m	Aug	12	-5m	Aug	4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May	18	+4m	May	26	+3m	June	4	+2m
May	26	+3m	June	4	+2m	June	22	-2m
July	27	=7m	July	19	-6m	June	22	-2m
July	19	=6m	July	10	-5m	July	10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 27 N

SUMMER IV LAT. 27 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	Solar Time
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	P.M. (Red Scale)
	Sunrise 05h 22m	05h 17m	05h 17m	05h 17m	05h 12m	05h 12m	
	Sunset 18h 32m	18h 35m	18h 35m	18h 35m	18h 40m	18h 40m	
5 30	73	72	72	72	70	70	5 30
6 0	77 0.1	75 0.1	75 0.1	75 0.1	73 0.2	73 0.2	6 0
6 30	80 0.2	78 0.3	78 0.3	78 0.3	76 0.3	76 0.3	6 30
7 0	83 0.4	81 0.4	81 0.4	81 0.4	79 0.4	79 0.4	7 0
7 30	86 0.5	84 0.5	84 0.5	84 0.5	82 0.5	82 0.5	7 30
8 0	89 0.7	87 0.7	87 0.7	87 0.7	85 0.7	85 0.7	8 0
8 30	93 0.8	91 0.9	91 0.9	91 0.9	88 0.9	88 0.9	8 30
9 0	97 1.1	94 1.1	94 1.1	94 1.1	91 1.1	91 1.1	9 0
9 30	102 1.3	99 1.4	99 1.4	99 1.4	95 1.4	95 1.4	9 30
9 45	105 1.4	101 1.5	101 1.5	101 1.5	98 1.6	98 1.6	9 45
10 0	108 1.6	104 1.7	104 1.7	104 1.7	100 1.8	100 1.8	10 0
10 15	112 1.7	108 1.9	108 1.9	108 1.9	104 2	104 2	10 15
10 30	116 1.9	112 2.1	112 2.1	112 2.1	107 2.3	107 2.3	10 30
10 45	122 2.0	118 2.3	118 2.3	118 2.3	112 2.6	112 2.6	10 45
11 0	129 2.1	125 2.5	125 2.5	125 2.5	119 2.9	119 2.9	11 0
11 15	139 2.0	134 2.4	134 2.4	134 2.4	128 3	128 3	11 15
11 30	151 1.6	147 2.1	147 2.1	147 2.1	142 2.7	142 2.7	11 30
11 45	166 0.9	164 1.1	164 1.1	164 1.1	161 1.6	161 1.6	11 45
12 0	183 -0.2	184 -0.3	184 -0.3	184 -0.3	186 -0.5	186 -0.5	12 0

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	Solar Time
A.M. (Blue Scale)	July 27	July 19	July 19	July 10	4	10	P.M. (Red Scale)
	Sunrise 05h 08m	05h 06m	05h 06m	05h 06m	05h 06m	05h 06m	
	Sunset 18h 44m	18h 49m	18h 49m	18h 49m	18h 57m	18h 57m	
5 30	68	67	67	67	65	65	5 30
6 0	71 0.2	70 0-Jan	70 0-Jan	70 0-Jan	68 0.2	68 0.2	6 0
6 30	74 0.3	73 0.3	73 0.3	73 0.3	71 0.3	71 0.3	6 30
7 0	77 0.4	76 0.4	76 0.4	76 0.4	74 0.4	74 0.4	7 0
7 30	80 0.6	78 0.6	78 0.6	78 0.6	76 0.6	76 0.6	7 30
8 0	83 0.7	81 0.7	81 0.7	81 0.7	79 0.7	79 0.7	8 0
8 30	86 0.9	84 0.9	84 0.9	84 0.9	81 0.9	81 0.9	8 30
9 0	89 1.2	87 1.2	87 1.2	87 1.2	84 1.1	84 1.1	9 0
9 30	92 1.5	90 1.5	90 1.5	90 1.5	87 1.5	87 1.5	9 30
9 45	95 1.7	92 1.7	92 1.7	92 1.7	88 1.7	88 1.7	9 45
10 0	97 1.9	94 1.9	94 1.9	94 1.9	90 1.9	90 1.9	10 0
10 15	100 2.1	96 2.2	96 2.2	96 2.2	92 2.2	92 2.2	10 15
10 30	103 2.5	99 2.6	99 2.6	99 2.6	94 2.5	94 2.5	10 30
10 45	107 2.8	102 3.0	102 3.0	102 3.0	97 3	97 3	10 45
11 0	113 3.2	107 3.5	107 3.5	107 3.5	100 3.6	100 3.6	11 0
11 15	121 3.6	114 4.1	114 4.1	114 4.1	105 4.4	105 4.4	11 15
11 30	135 3.6	126 4.5	126 4.5	126 4.5	114 5.4	114 5.4	11 30
11 45	156 2.3	149 3.5	149 3.5	149 3.5	131 5.7	131 5.7	11 45
12 0	186 -0.7	185 -0.7	185 -0.7	185 -0.7	172 1.2	172 1.2	12 0

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

2 0 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

12 45 The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

12 30 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

12 15 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

12 0 -

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 30 N

SUMMER IV LAT. 30 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 05h 18m		05h 12m		05h 07m		
	Sunset 18h 36m		18h 40m		18h 46m		
5 30	73		72		70		
6 0	77 0.1		75 0.2		74 0.2		
6 30	81 0.3		79 0.3		77 0.3		
7 0	84 0.4		82 0.4		80 0.4		
7 30	88 0.5		86 0.5		84 0.6		
8 0	91 0.7		89 0.7		87 0.7		
8 30	95 0.8		93 0.9		91 0.9		
9 0	100 1.0		98 1.1		95 1.1		
9 30	106 1.2		103 1.3		100 1.4		
9 45	109 1.4		106 1.4		103 1.5		
10 0	113 1.5		109 1.6		106 1.7		
10 15	117 1.6		114 1.7		110 1.9		
10 30	122 1.7		118 1.9		114 2.1		
10 45	128 1.7		125 2.0		120 2.2		
11 0	136 1.7		132 2.0		127 2.3		
11 15	145 1.5		142 1.8		137 2.2		
11 30	156 1.2		153 1.4		150 1.8		
11 45	168 0.6		168 0.7		166 0.9		
12 0	182 -0.1		183 -0.2		184 -0.3		

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10			
	Sunrise 05h 02m		04h 59m		04h 59m		
	Sunset 18h 51m		18h 56m		19h 04m		
5 30	68		67		65		
6 0	72 0.2		70 0-Jan		69 0.2		
6 30	75 0.3		74 0.3		72 0.3		
7 0	78 0.4		77 0.4		75 0.4		
7 30	82 0.6		80 0.6		78 0.6		
8 0	85 0.7		83 0.7		81 0.7		
8 30	88 0.9		86 0.9		84 0.9		
9 0	92 1.1		90 1.2		87 1.2		
9 30	97 1.4		94 1.5		91 1.5		
9 45	99 1.6		97 1.6		93 1.6		
10 0	102 1.8		99 1.8		96 1.8		
10 15	106 2		103 2.1		98 2.1		
10 30	110 2.2		106 2.3		102 2.4		
10 45	116 2.5		111 2.6		106 2.7		
11 0	123 2.6		118 2.9		111 3.1		
11 15	132 2.7		127 3.1		119 3.5		
11 30	145 2.3		140 2.9		130 3.6		
11 45	163 1.2		159 1.8		148 2.9		
12 0	184 -0.4		183 -0.3		175 0.4		

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

6 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

6 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

6 30 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 33 N

SUMMER IV LAT. 33 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl -- May	May -- May	May -- May	May -- May	May -- May	May -- May	
A.M. (Blue Scale)	26 -- 2	2 -- 10	10 -- 18	10 -- 18	10 -- 18	10 -- 18	
P.M. (Red Scale)	Aug -- Aug	Aug -- Aug	July -- Aug	July -- Aug	July -- Aug	July -- Aug	
	12 -- 18	4 -- 12	27 -- 4	27 -- 4	27 -- 4	27 -- 4	
	Sunrise 05h 14m	05h 07m	05h 01m	05h 01m	05h 01m	05h 01m	
	Sunset 18h 40m	18h 46m	18h 51m	18h 51m	18h 51m	18h 51m	
5 30	74	72	70	70	70	70	
6 0	78 0.2	76 0.2	74 0.2	74 0.2	74 0.2	74 0.2	
6 30	81 0.3	80 0.3	78 0.3	78 0.3	78 0.3	78 0.3	
7 0	85 0.4	83 0.4	81 0.4	81 0.4	81 0.4	81 0.4	
7 30	89 0.5	87 0.5	85 0.6	85 0.6	85 0.6	85 0.6	
8 0	93 0.7	91 0.7	89 0.7	89 0.7	89 0.7	89 0.7	
8 30	98 0.8	96 0.9	93 0.9	93 0.9	93 0.9	93 0.9	
9 0	103 1.0	101 1.0	98 1.1	98 1.1	98 1.1	98 1.1	
9 30	109 1.2	107 1.2	104 1.3	104 1.3	104 1.3	104 1.3	
9 45	113 1.3	110 1.3	107 1.4	107 1.4	107 1.4	107 1.4	
10 0	117 1.3	114 1.5	111 1.6	111 1.6	111 1.6	111 1.6	
10 15	122 1.4	119 1.5	115 1.7	115 1.7	115 1.7	115 1.7	
10 30	127 1.5	124 1.6	120 1.8	120 1.8	120 1.8	120 1.8	
10 45	133 1.4	130 1.6	127 1.9	127 1.9	127 1.9	127 1.9	
11 0	141 1.4	138 1.6	134 1.8	134 1.8	134 1.8	134 1.8	
11 15	149 1.2	147 1.4	144 1.7	144 1.7	144 1.7	144 1.7	
11 30	159 0.9	158 1.0	155 1.3	155 1.3	155 1.3	155 1.3	
11 45	170 0.4	170 0.5	169 0.6	169 0.6	169 0.6	169 0.6	
12 0	182	182 -0.1	183 -0.2	183 -0.2	183 -0.2	183 -0.2	

		SUN'S AZIMUTH					
Solar Time	May -- May	Mar -- Mar	Mar -- Mar	June -- July	June -- July	June -- July	
A.M. (Blue Scale)	18 -- 25	10 -- 21	10 -- 21	4 -- 10	4 -- 10	4 -- 10	
P.M. (Red Scale)	July -- July	July -- July	July -- July	4 -- 10	4 -- 10	4 -- 10	
	27 -- 19	19 -- 10	19 -- 10	4 -- 10	4 -- 10	4 -- 10	
	Sunrise 04h 56m	04h 52m	04h 52m	04h 52m	04h 52m	04h 52m	
	Sunset 18h 57m	19h 03m	19h 03m	19h 12m	19h 12m	19h 12m	
5 30	69 0.1	67 0.1	67 0.1	66 0.1	66 0.1	66 0.1	
6 0	73 0.2	71 0-Jan	71 0-Jan	69 0.2	69 0.2	69 0.2	
6 30	76 0.3	75 0.3	75 0.3	73 0.3	73 0.3	73 0.3	
7 0	80 0.4	78 0.5	78 0.5	76 0.4	76 0.4	76 0.4	
7 30	83 0.6	82 0.6	82 0.6	80 0.6	80 0.6	80 0.6	
8 0	87 0.7	85 0.8	85 0.8	83 0.7	83 0.7	83 0.7	
8 30	91 0.9	89 0.9	89 0.9	87 0.9	87 0.9	87 0.9	
9 0	96 1.1	94 1.2	94 1.2	91 1.1	91 1.1	91 1.1	
9 30	101 1.4	99 1.4	99 1.4	96 1.4	96 1.4	96 1.4	
9 45	104 1.5	102 1.6	102 1.6	98 1.6	98 1.6	98 1.6	
10 0	108 1.7	105 1.7	105 1.7	101 1.8	101 1.8	101 1.8	
10 15	112 1.8	109 1.9	109 1.9	105 2	105 2	105 2	
10 30	117 2	113 2.1	113 2.1	109 2.2	109 2.2	109 2.2	
10 45	123 2.1	119 2.3	119 2.3	114 2.4	114 2.4	114 2.4	
11 0	131 2.1	127 2.4	127 2.4	121 2.6	121 2.6	121 2.6	
11 15	140 2	136 2.3	136 2.3	129 2.7	129 2.7	129 2.7	
11 30	152 1.5	149 1.9	149 1.9	141 2.4	141 2.4	141 2.4	
11 45	167 0.8	164 1.0	164 1.0	157 1.7	157 1.7	157 1.7	
12 0	183 -0.2	182 -0.2	182 -0.2	177 0.2	177 0.2	177 0.2	

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

2 0 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

12 0 The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

12 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

12 0 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl	26	+2m	May	2	+3m	May	10	+4m
May	2	+3m	May	10	+4m	May	18	+4m
Aug	12	-5m	Aug	4	-6m	July	27	-7m
Aug	18	-4m	Aug	12	-5m	Aug	4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May	18	+4m	May	26	+3m	June	4	+2m
May	26	+3m	June	4	+2m	June	22	-2m
July	27	=7m	July	19	-6m	June	22	-2m
July	19	=6m	July	10	-5m	July	10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 36 N

SUMMER IV LAT. 36 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 05h 09m		05h 01m		04h 54m		
	Sunset 18h 45m		18h 51m		18h 58m		
5 30	74		72		71	0.1	
6 0	78	0.2	76	0.2	75	0.2	
6 30	82	0.3	80	0.3	79	0.3	
7 0	86	0.4	85	0.4	83	0.4	
7 30	91	0.5	89	0.5	87	0.6	
8 0	95	0.6	93	0.7	91	0.7	
8 30	100	0.8	98	0.8	96	0.9	
9 0	106	0.9	104	1.0	101	1.1	
9 30	113	1.1	110	1.2	108	1.2	
9 45	117	1.2	114	1.2	111	1.3	
10 0	121	1.2	119	1.3	116	1.4	
10 15	126	1.2	123	1.4	120	1.5	
10 30	131	1.3	129	1.4	126	1.6	
10 45	138	1.2	135	1.4	132	1.6	
11 0	145	1.1	143	1.3	140	1.5	
11 15	153	0.9	151	1.1	149	1.3	
11 30	162	0.7	161	0.8	159	0.9	
11 45	171	0.3	171	0.4	170	0.4	
12 0	181		182	-0.1	182	-0.1	

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10			
	Sunrise 04h 49m		04h 44m		04h 43m		
	Sunset 19h 04m		19h 10m		19h 20m		
5 30	69	0.1	68	0.1	66	0.1	
6 0	73	0.2	72	0-Jan	70	0.2	
6 30	77	0.3	76	0.3	74	0.3	
7 0	81	0.5	80	0.5	78	0.5	
7 30	85	0.6	84	0.6	81	0.6	
8 0	89	0.7	88	0.8	85	0.7	
8 30	94	0.9	92	0.9	90	0.9	
9 0	99	1.1	97	1.1	94	1.1	
9 30	105	1.3	103	1.4	100	1.4	
9 45	109	1.4	106	1.5	103	1.5	
10 0	113	1.5	110	1.6	107	1.7	
10 15	117	1.6	115	1.7	111	1.8	
10 30	123	1.7	120	1.8	115	1.9	
10 45	129	1.7	126	1.9	121	2.1	
11 0	137	1.7	134	1.9	128	2.1	
11 15	146	1.5	143	1.7	137	2	
11 30	157	1.1	154	1.3	148	1.7	
11 45	169	0.5	167	0.7	162	1.1	
12 0	182	-0.2	182	-0.1	177	0.1	

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

5 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

6 30 The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

7 0 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

8 0 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

9 0

9 30

9 45

10 0

10 15

10 30

10 45

11 0

11 15

11 30

11 45

12 0

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 39 N

SUMMER IV LAT. 39 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl -- May	May -- May	May -- May	May -- May	May -- May	May -- May	
A.M. (Blue Scale)	26 -- 2	2 -- 10	10 -- 18	10 -- 18	10 -- 18	10 -- 18	
	Aug -- Aug	Aug -- Aug	July -- Aug	July -- Aug	July -- Aug	July -- Aug	
	12 -- 18	4 -- 12	27 -- 4	27 -- 4	27 -- 4	27 -- 4	
	Sunrise 05h 04m	04h 55m	04h 47m	04h 47m	04h 47m	04h 47m	
	Sunset 18h 51m	18h 57m	19h 05m	19h 05m	19h 05m	19h 05m	
5 30	74	72	71	0.1			
6 0	78	0.2	77	0.2	75	0.2	
6 30	83	0.3	81	0.3	80	0.3	
7 0	88	0.4	86	0.4	84	0.4	
7 30	92	0.5	91	0.5	89	0.6	
8 0	97	0.6	95	0.7	93	0.7	
8 30	103	0.8	101	0.8	99	0.9	
9 0	109	0.9	107	1.0	105	1	
9 30	116	1.0	114	1.1	112	1.2	
9 45	120	1.1	118	1.1	115	1.2	
10 0	125	1.1	122	1.2	120	1.3	
10 15	130	1.1	127	1.2	125	1.3	
10 30	135	1.1	133	1.2	131	1.3	
10 45	141	1.0	139	1.1	137	1.3	
11 0	148	0.9	147	1.0	144	1.2	
11 15	156	0.7	154	0.9	153	1	
11 30	164	0.5	163	0.6	162	0.7	
11 45	172	0.2	172	0.3	172	0.3	
12 0	181		182		182	-0.1	

		SUN'S AZIMUTH					
Solar Time	May -- May	Mar -- Mar	June -- July	June -- July	June -- July	June -- July	
A.M. (Blue Scale)	18 -- 25	10 -- 21	4 -- 10	4 -- 10	4 -- 10	4 -- 10	
	July -- July	July -- July	July -- July	July -- July	July -- July	July -- July	
	27 -- 19	19 -- 10	19 -- 10	19 -- 10	19 -- 10	19 -- 10	
	Sunrise 04h 41m	04h 36m	04h 34m	04h 34m	04h 34m	04h 34m	
	Sunset 19h 12m	19h 19m	19h 29m	19h 29m	19h 29m	19h 29m	
5 30	69	0.1	68	0.1	66	0.2	
6 0	74	0.2	72	0-Jan	71	0.2	
6 30	78	0.3	77	0.4	75	0.4	
7 0	82	0.5	81	0.5	79	0.5	
7 30	87	0.6	85	0.6	83	0.6	
8 0	92	0.7	90	0.8	88	0.8	
8 30	97	0.9	95	0.9	92	0.9	
9 0	102	1.1	100	1.1	98	1.1	
9 30	109	1.2	107	1.3	104	1.3	
9 45	113	1.3	111	1.4	108	1.4	
10 0	117	1.4	115	1.5	112	1.5	
10 15	122	1.4	120	1.5	116	1.6	
10 30	128	1.5	125	1.6	121	1.7	
10 45	134	1.4	132	1.6	127	1.7	
11 0	142	1.3	139	1.5	135	1.7	
11 15	151	1.1	148	1.3	143	1.6	
11 30	160	0.8	158	1.0	153	1.2	
11 45	171	0.4	169	0.5	165	0.7	
12 0	182	-0.1	181		178		

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min.

Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

The azimuths given are the means for the calendar periods heading each column. for greater accuracy, interpolate between them. E-g., at 6-0 am on May 2 the best figure would be 78".

III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl	26	+2m	May	2	+3m	May	10	+4m
May	2	+3m	May	10	+4m	May	18	+4m
Aug	12	-5m	Aug	4	-6m	July	27	-7m
Aug	18	-4m	Aug	12	-5m	Aug	4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May	18	+4m	May	26	+3m	June	4	+2m
May	26	+3m	June	4	+2m	June	22	-2m
July	27	=7m	July	19	-6m	June	22	-2m
July	19	=6m	July	10	-5m	July	10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 42 N

SUMMER IV LAT. 42 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 04h 58m		04h 49m		04h 40m		
	Sunset 18h 57m		19h 04m		19h 13m		
5 30	74		73 0.1		71 0.1		
6 0	79 0.2		77 0.2		76 0.2		
6 30	84 0.3		82 0.3		81 0.3		
7 0	89 0.4		87 0.4		85 0.4		
7 30	94 0.5		92 0.5		90 0.6		
8 0	99 0.6		97 0.7		96 0.7		
8 30	105 0.7		103 0.8		101 0.8		
9 0	112 0.8		110 0.9		108 1		
9 30	119 0.9		117 1.0		115 1.1		
9 45	123 1.0		121 1.0		119 1.1		
10 0	128 1.0		126 1.1		124 1.2		
10 15	133 1.0		131 1.1		129 1.2		
10 30	138 0.9		137 1.0		135 1.2		
10 45	144 0.9		143 1.0		141 1.1		
11 0	151 0.8		150 0.9		148 1		
11 15	158 0.6		157 0.7		156 0.8		
11 30	165 0.4		165 0.5		164 0.5		
11 45	173 0.2		173 0.2		173 0.2		
12 0	181		181		182		

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June 4	July 10	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10			
	Sunrise 04h 33m		04h 27m		04h 24m		
	Sunset 19h 20m		19h 28m		19h 39m		
5 30	70 0.2		69 0.2		67 0.2		
6 0	74 0.3		73 0-Jan		71 0.3		
6 30	79 0.4		78 0.4		76 0.4		
7 0	84 0.5		82 0.5		80 0.5		
7 30	89 0.6		87 0.6		85 0.6		
8 0	94 0.7		92 0.7		90 0.8		
8 30	99 0.9		98 0.9		95 0.9		
9 0	106 1		104 1.1		101 1.1		
9 30	113 1.2		111 1.2		108 1.2		
9 45	117 1.2		115 1.3		112 1.3		
10 0	122 1.3		119 1.3		116 1.4		
10 15	127 1.3		124 1.4		121 1.5		
10 30	132 1.3		130 1.4		126 1.5		
10 45	139 1.2		137 1.3		133 1.5		
11 0	146 1.1		144 1.2		140 1.4		
11 15	154 0.9		152 1		148 1.2		
11 30	163 0.6		161 0.7		157 0.9		
11 45	172 0.3		171 0.4		167 0.5		
12 0	182		181		178		

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

5 30 II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

6 30 III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

7 0 TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

7 30

8 0

8 30

9 0

9 30

9 45

10 0

10 15

10 30

10 45

11 0

11 15

11 30

11 45

12 0

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

LAT. 45 N

SUMMER IV LAT. 45 N

MID-SUMMER V

INSTRUCTIONS

For use of Bagnold Sun-Compass

		SUN'S AZIMUTH					
Solar Time	Apl 26	May 2	May 2	May 10	May 10	May 18	
A.M. (Blue Scale)	Aug 12	Aug 18	Aug 4	Aug 12	July 27	Aug 4	
	Sunrise 04h 51m		04h 41m		04h 31m		
	Sunset 19h 03m		19h 12m		19h 21m		
5 30	74	0.1	73	0.1	72	0.2	
6 0	80	0.2	78	0.2	77	0.2	
6 30	85	0.3	83	0.3	82	0.3	
7 0	90	0.4	88	0.4	87	0.5	
7 30	95	0.5	94	0.5	92	0.6	
8 0	101	0.6	99	0.6	98	0.7	
8 30	107	0.7	106	0.7	104	0.8	
9 0	114	0.8	112	0.8	111	0.9	
9 30	122	0.9	120	0.9	118	1	
9 45	126	0.9	125	0.9	123	1	
10 0	131	0.9	129	1.0	127	1	
10 15	136	0.9	134	0.9	132	1	
10 30	141	0.8	140	0.9	138	1	
10 45	147	0.7	146	0.8	144	0.9	
11 0	153	0.6	152	0.7	151	0.8	
11 15	160	0.5	159	0.6	158	0.6	
11 30	167	0.3	166	0.4	166	0.4	
11 45	174	0.2	174	0.2	173	0.2	
12 0	181		181		181		

		SUN'S AZIMUTH					
Solar Time	May 18	May 25	Mar 10	Mar 21	June --	July	
A.M. (Blue Scale)	July 27	July 19	July 19	July 10	4	10	
	Sunrise 04h 23m		04h 16m		04h 13m		
	Sunset 19h 30m		19h 39m		19h 50m		
5 30	70	0.2	69	0.2	67	0.2	
6 0	75	0.3	74	0-Jan	72	0.3	
6 30	80	0.4	79	0.4	77	0.4	
7 0	85	0.5	84	0.5	82	0.5	
7 30	90	0.6	89	0.6	87	0.6	
8 0	96	0.7	94	0.7	92	0.7	
8 30	102	0.8	100	0.9	98	0.9	
9 0	109	1	107	1.0	104	1	
9 30	116	1.1	114	1.1	112	1.2	
9 45	121	1.1	119	1.2	116	1.2	
10 0	125	1.1	123	1.2	120	1.3	
10 15	131	1.1	129	1.2	125	1.3	
10 30	136	1.1	134	1.2	131	1.3	
10 45	142	1	141	1.1	137	1.2	
11 0	149	0.9	147	1.0	144	1.1	
11 15	157	0.7	155	0.8	152	1	
11 30	165	0.5	163	0.6	160	0.7	
11 45	173	0.2	172	0.3	169	0.4	
12 0	181		181		178		

Solar Time TO ALIGN. See that plane of compass is parallel to that of ground on which vehicle stands (vehicle ready loaded for journey and clamping nut loose). Aim vehicle at a distant object. Turn whole compass till side pointer and adjusting thumb-screw are both to the rear: and pointer, central needle and distant object are accurately in line, Tighten clamping nut, TO SET.

P.M. (Red Scale) I Solar Time. Select the appropriate column of the Azimuth Card. Alter watch from Standard Time (0) by the given correction for the Equation of Time; and (b) by the correction for longitude — plus 4 minutes per degree East, and minus ditto West, of standard time Meridian. (long 30"). Total watch alteration 32 min. Example. AT SIWA (Long. 25° 30' E) on Feb 20, watch must be retarded 14 min for Equation of Time. and a further 18 min, for Longitude west of standard time meridian (long 30°). Total watch alteration 32 min.

II. Setting. When 180° on side scale is under the pointer, the compass is correctly set for solar noon. The shadow of the needle then gives vehicle's true bearing. In morning, sun is to the east of south, so compass ring must be correspondingly rotated to the left, Similarly rotate it to right in after-noon, so that red (red for sunset) scale is under pointer. The setting of the compass ring side scale at any time is the sun's azimuth at that time, and this is given in the tables. The Setting is to be made at the beginning of each period and is correct for the middle of the period. Errors at beginning and end of period cancel one another.

III. Latitude. The sun's azimuth at any given time is less for lower latitudes than 18', and greater for higher latitudes. The variation per degree of Lat. is given by the small figures in each column.

TO USE. Read vehicle's true course direct from position of shadow on top scale. To set a fixed course, turn central disc till arrow marks required bearing.

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

Apl 26	+2m	May 2	+3m	May 10	+4m
May 2	+3m	May 10	+4m	May 18	+4m
Aug 12	-5m	Aug 4	-6m	July 27	-7m
Aug 18	-4m	Aug 12	-5m	Aug 4	-6m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

Corrections

1 For Local Solar Time :-

(a) Equation of time. Advance (+) or Retard (-) Watch:

May 18	+4m	May 26	+3m	June 4	+2m
May 26	+3m	June 4	+2m	June 22	-2m
July 27	=7m	July 19	-6m	June 22	-2m
July 19	=6m	July 10	-5m	July 10	-5m

(b) Longitude See Instruction I (b)

II For Latitude See Instruction III

