

The
VIRTUAL MUSEUM
of the
LANCASHIRE & YORKSHIRE RAILWAY

Operational Documents, Reports & Pamphlets

27 January 1913

School of Signalling

Programme

Distribution of

Prizes

and Certificates

for the session 1911-1912

(22 Pages)

LANCASHIRE & YORKSHIRE
RAILWAY.

School of Signalling

PROGRAMME

Distribution of
Prizes
and Certificates

for the Session 1911-1912

Monday, January 27th, 1913

JOHN A. F. ASPINALL,
General Manager.

LANCASHIRE & YORKSHIRE
RAILWAY.

School of Signalling

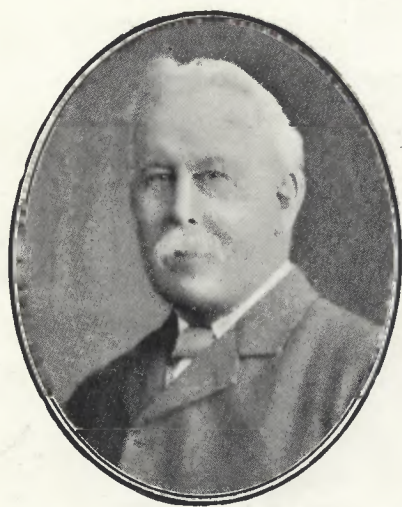
PROGRAMME

**Distribution of
Prizes
and Certificates**

for the Session 1911-1912

Monday, January 27th, 1913

JOHN A. F. ASPINALL,
General Manager.



JANUARY 27th, 1913,
2-15 p.m.

**Presentation of Prizes
and Certificates**

In connection with the 1911-1912 Session

BY

JOHN A. F. ASPINALL, Esq.,

M.Eng., M. Council Inst. C.E.,

General Manager.

CHAIRMAN :

A. WATSON, Esq.,

M.Inst.C.E.

Superintendent of the Line.



Who will be supported by the
Officers of the Company and
other gentlemen.



School of Signalling—Interior.

School of Signalling.

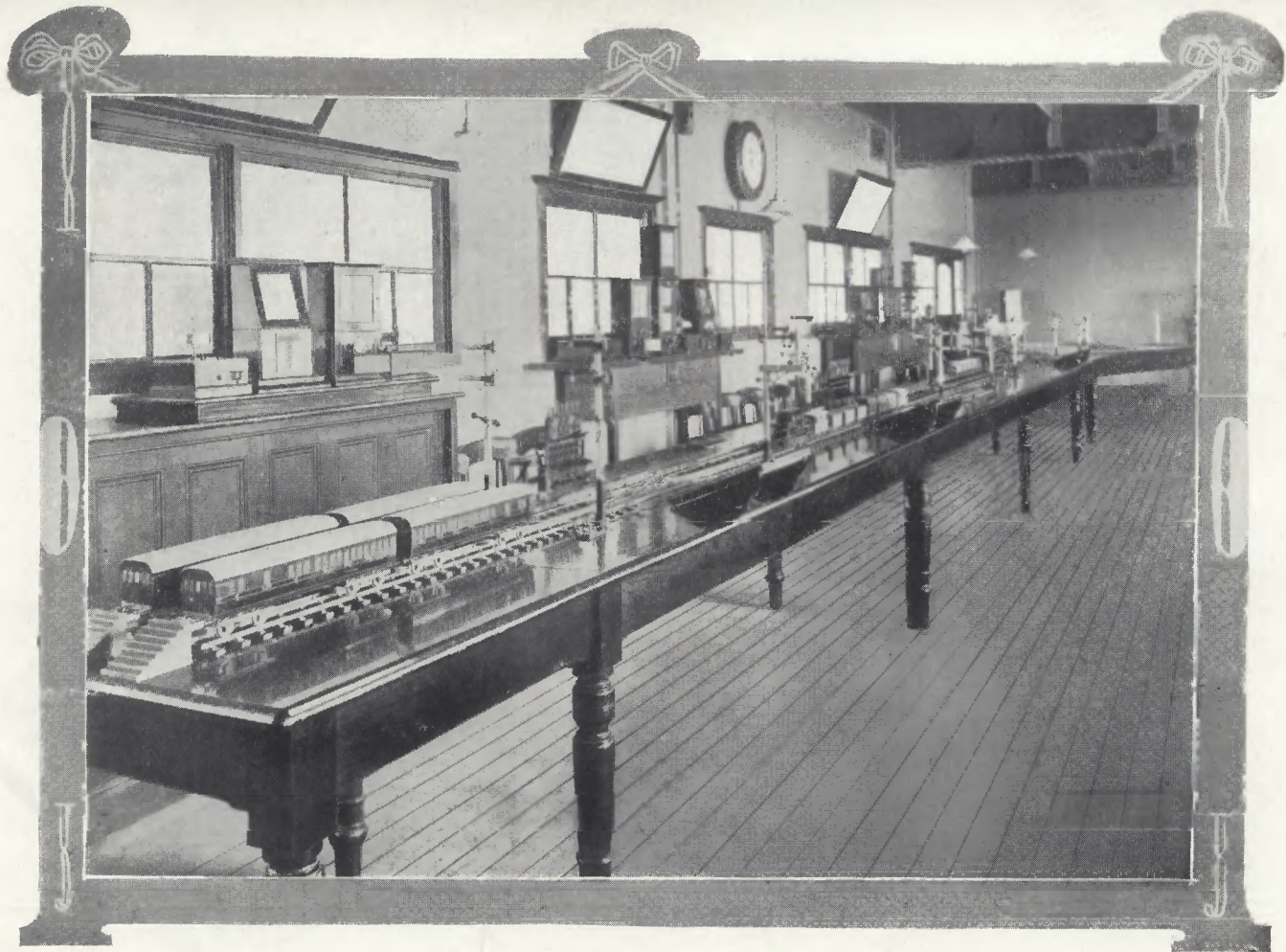


THE SCHOOL OF SIGNALLING has been instituted to give facilities to members of the staff to extend their knowledge of railway working, and may be said with its present equipment to be the finest School of Signalling in this Country.

MODEL MINIATURE RAILWAY.

A model miniature railway is provided with signals and points worked from three signal boxes. Signal box T. works the points and signals in connection with a terminal station so laid out that all types of operations which require to be carried out at a terminal station can be demonstrated; this signal box is connected by block telegraph circuits to signal box "A." Signal Box "A" operates the points and signals in connection with Up and Down main lines, the inlet to a goods loop running between signal box "A" and signal box "B" and also the points leading into a refuge siding; this signal box is also connected by the block telegraph circuit with signal box "B." Signal box "B" works the outlet from the goods loop and the Junction to and from signal boxes "C" and "D" respectively, and is connected by block telegraph circuits with signal boxes "A," "C" and "D."

The model railway as laid out at signal boxes "T," "A" and "B" allows of all kinds of operations under different conditions to be demonstrated.



Miniature Railway and Appliances.

TRACK CIRCUITS.

A track circuit is provided between the Up Starting signal for "B" and the Up Home signal for "A" and when a train is upon the track circuited section of the line the block instrument is locked at the "TRAIN ON LINE" position, a three position track indicator in signal box "A" shews the approach of the train and the Up Starting signal for "B" is locked in the danger position. This arrangement shows how a track circuit can be used for protecting an obstruction between the last stop signal for the signal box in the rear, and the home signal for the signal box in advance.

Track circuits are also provided between the fouling point of the Junction at "B" and the starting signal to "C" and the starting signal to "D" operate indicators in the "B" signal box, shewing when the line to "C" or "B" respectively is obstructed and also locks the e protecting signals. This arrangement shows how track circuits can be used for protecting an obstruction between home signals and starting signals.

BELL COMMUNICATION.

At the Up Home Signal from "D" for signal box "B" to and from electric bell communication is established which operates an indicator in the signal box at "B" shewing "TRAIN WAITING AT SIGNAL," and demonstrates what is done at places where such appliances are in force in substitution of carrying out the provisions of Rule 55 in the Book of Rules and Regulations, this indicator is replaced to the normal position when the home signal is lowered.

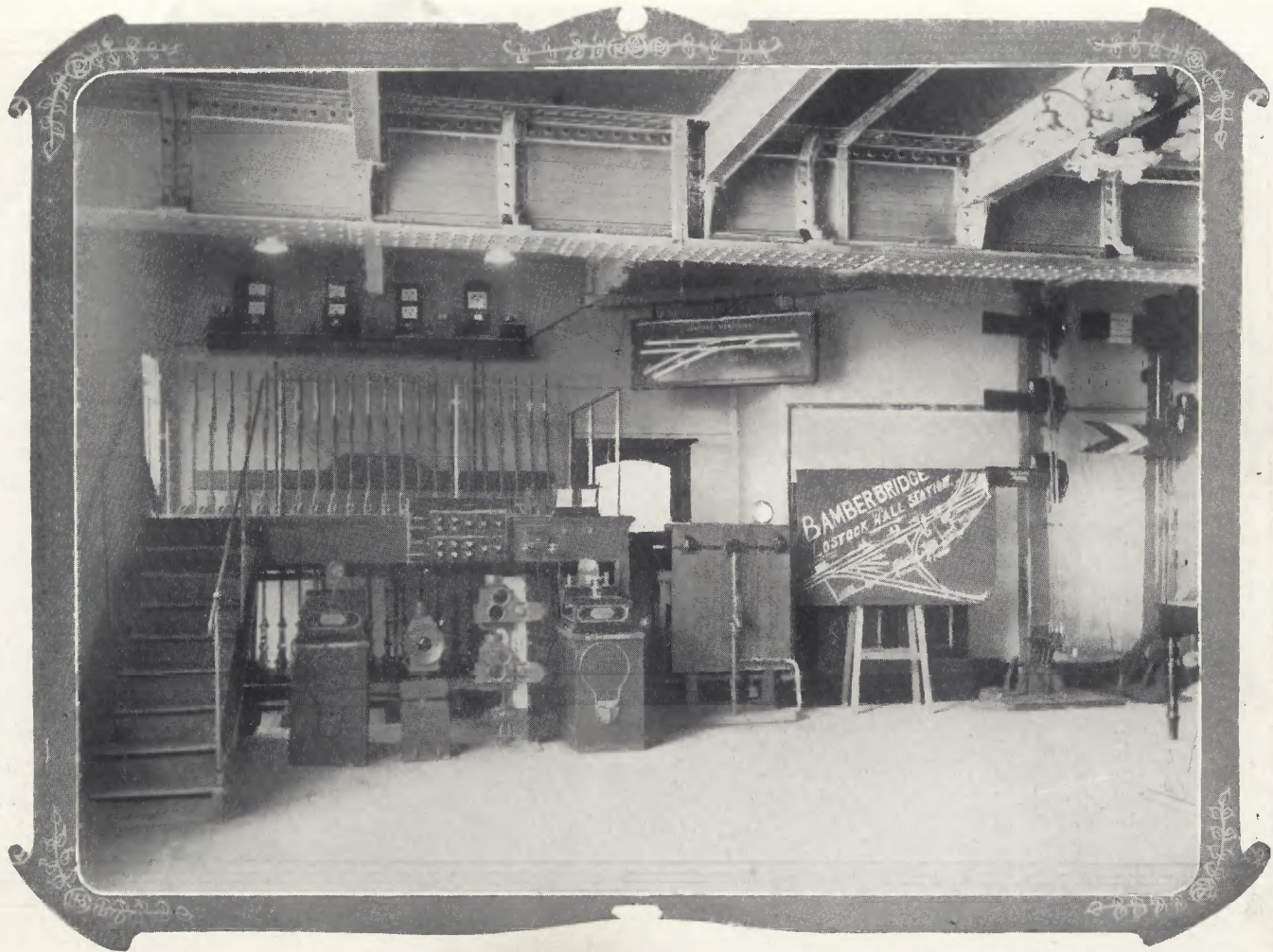
EXEMPTION OF RULE 55.

Rule-55 is also suspended in connection with trains detained on the track circuited portion of the line similar to the practice which is in operation on the Lancashire and Yorkshire Railway. At the signals where Rule 55 is exempted a plate is fixed to this effect.

Miniature engines of the Company's standard electric and steam type are run along the railway, and in order that all types of trains may be dealt with miniature passenger and goods vehicles are also used. The trains are electrically propelled by the use of a third rail similar to the electric traction system in operation on the Company's electrified lines in the Liverpool and Southport districts so arranged that by means of keys in connection with separate traction section circuits a train may be drawn forward or set back as required on different parts of the railway.

At each signal post a cut out switch is also fixed so that students taking up the position of the driver of a train may bring it to a stand at a signal when at danger and restart the train after the signal has been lowered.

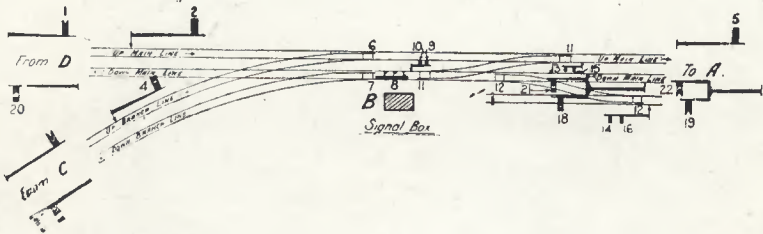
Some idea of the excellent arrangements which have been installed in connection with the School of Signalling will be obtained from the illustrations which appear in this publication.



Standard Signal Box and Signals.

STANDARD TYPE OF SIGNAL BOX.

One of the Company's Standard Signal Box Lever Frames with the necessary block instruments is fixed in the School so arranged as to work the points and signals which would be required for a railway laid down as shewn in the following sketch:—



This lever frame is extensively used for dealing with all kinds of operations, as by means of the illuminated diagram shewn in the photograph the passage of the train along the line can be indicated. Illuminations can be placed on each running line to indicate the following positions:—

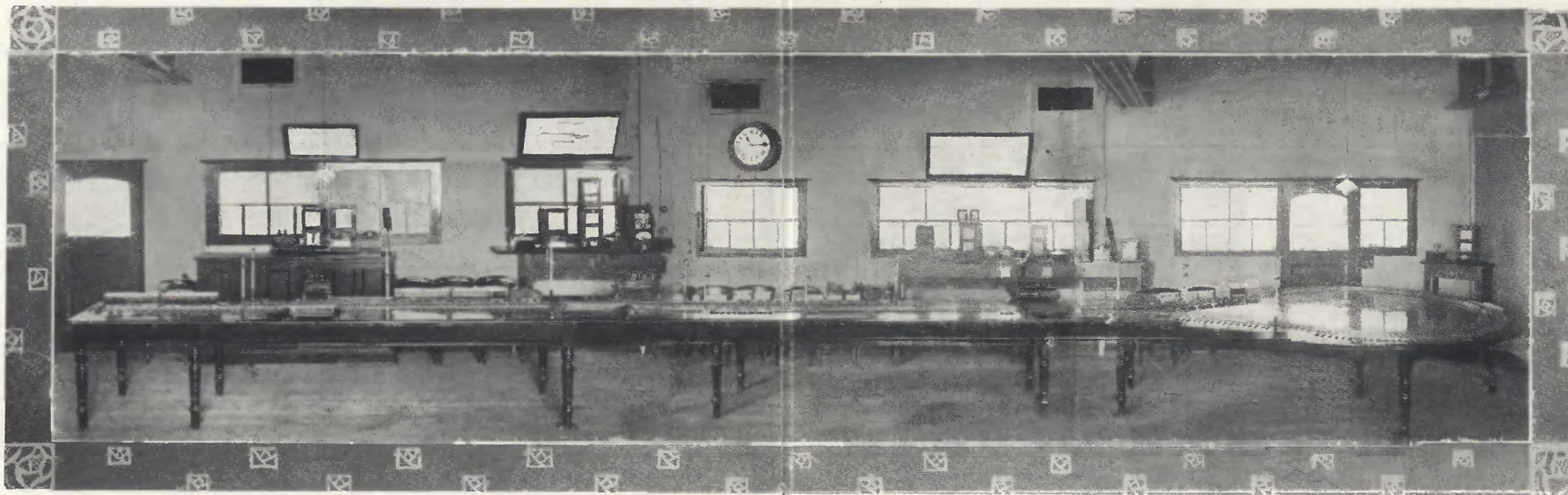
- (1) Train passed distant signal.
- (2) Train at a stand at Home signal.
- (3) Train passed signal box.
- (4) Train at a stand at starting signal.
- (5) Train passed starting signal.

Electric Tablet instruments are provided and also patterns of the standard type of signals in use on this Company's line together with apparatus showing how the chain communication between passengers and guards and engine drivers is operated.

The text books used in connection with the School of Signalling are :—

- (a) The Company's Book of Rules and Regulations.
- (b) Appendices to the Book of Rules and Regulations as shewn below :—
 - (1) Regulations for working single lines of railway by train staff and ticket.
 - (2) Regulations for working single lines of railway by pilot guard.
 - (3) Regulations for working single lines of railway by only one engine in steam or two or more engines coupled together.
 - (4) Regulations for working goods lines where the absolute block telegraph system is not in operation or where no special regulations are in force. (Not applicable to single lines of railway.)
 - (5) Regulations for Train Signalling by Block Telegraph on double lines of railway.
 - (6) Regulations for train signalling on single lines of railway worked on the Electric Train Tablet Block System.
- (c) Appendix to the Book of Rules and Regulations and Working Time Table.
- (d) Signalling Arrangements Booklet.
- (e) Wrong Line Orders Booklet

The lectures are given by Mr. DAVIES, of the Department of the Superintendent of the Line, who is ably assisted in the work by Chief Block Inspectors, WHITE, SMITH, and TURNER.



SESSION 1910.

The School of Signalling was opened in the early part of 1910 and at the examination held in June, 1910, 60 Students sat, with the following results:—

Result.	Class.	Division.
23	1	1
11	1	2
10	1	3
8	2	1
6	2	2
2	3	1

SESSION 1910-1911.

For the Session 1910-11 examination 46 Students obtained the following result:—

Section.	Result.	Class.	Division.
"A" Advanced	1	1	1
"	3	1	2
"	2	1	3
"	5	2	1
"	1	2	2
"	3	2	3
"	1	3	3
"B" Intermediate	3	1	2
"	2	1	3
"	3	2	1
"	4	2	3
"C" Elementary	6	1	1
"	6	1	2
"	4	1	3
"	1	2	2
"	1	2	3

LANCASHIRE & YORKSHIRE RAILWAY.

SCHOOL OF SIGNALLING.

List of Prize Winners—Examination, Session 1911-12.

STUDENT.	Department.	Class.	Position	Prize.	MARKS.		Class.	Division
					Possible	Ob-tained.		
W. DAWBER	Office of Superin-tendent of the Line	"A" (Advanced)	1st	Barometer	400	395	I	I
J. MOTTERSHEAD ...	" "	"	2nd	Book on Mechan-ical Signalling, and Watch	400	385	I	I
A. C. O. MITCHELL ..	Eastern District Passenger Superin-tendent's Office	"	3rd	The Railway Goods Station ; a guide to its Control and Operation	400	382	I	I
D. P. LEES	Office of Superin-tendent of the Line	"C" (Intermediate)	1st	Barometer	300	251	I	2
A. WRIGHT	District Goods Superintendent's Office, Bolton	"	2nd	Flower Stand	300	245	I	3
G. VARLEY	Chief Mechanical En-gineer's, Horwich	"	3rd	Book on Practical Alternating Currents	300	237	I	3

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WM. MILLER	Telegraph, Liver-pool	"D" (Preliminary)	1st	The Railway Goods Station ; a guide to its control and Operation and Fountain Pen	300	276	I	I
P. H. PATTERSON ...	District Goods Supt's Office, Liverpool	"	2nd	Swan Fountain Pen	300	256	I	2
W. S. JEFFREYS ...	Parcels Office, Blackburn	"	3rd	Days in Cornwall	300	254	I	2
E. HAWARTH	Passenger, Hindley	"E" (Preliminary)	1st	Gold Medal	300	271	I	2
J. W. LONGSTAFF ...	Permanent Way, Walkden	"	2nd	Clock	300	262	I	2
RD. HARTLEY	Passenger, Halifax	"	3rd	Le Vicomte de Bragelonne (In French)	300	254	I	2
GEO. A. PARKER ...	Signalman, Sowerby Bridge	Signalmen	1st	Watch Chain	150	130	I	I
EDMUND THURMAN	Signalman, Bowling Junction	"	2nd	Lady's Umbrella	150	128	I	2
JOSEPH G. T. HALE	Signalman, Linacre Road	"	3rd	Gent's Umbrella	150	120	I	2

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School of Signalling

SESSION 1911-1912.

This is to Certify

THAT

W. DAWBER

(Department of the Superintendent of the Line)

has sat for an Examination in the following subjects,
and obtained the results shown:

SUBJECT	Section	No. of Marks Possible	No. of Marks Obtained	RESULT	
				Correct	Section
Block Telegraph Regulations and Signalling, etc. Arrangements (Advanced)	A	400	395	1	1

AND WINNER OF FIRST PRIZE.

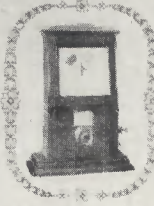
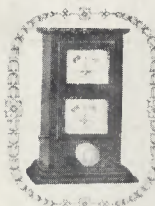
Moates
Lecturer

M. Watson

Superintendent of the Line.

Moates
Examiner.

Schmitt General Manager



SESSION 1911-1912.

At the last examination held in connection with the 1911-1912 Session, out of 600 Students 356 presented themselves and obtained the results shown:—

Section.	Result.	Class.	Division.
"A" Advanced ...	3 ...	1 ...	1
"	3 ...	1 ...	2
"	2 ...	1 ...	3
"C" Intermediate	1 ...	1 ...	2
"	6 ...	1 ...	3
"	6 ...	2 ...	1
"	4 ...	2 ...	2
"	7 ...	2 ...	3
"	7 ...	3 ...	1
"	5 ...	3 ...	2
"D" Preliminary	1 ...	1 ...	1
"	3 ...	1 ...	2
"	4 ...	1 ...	3
"	13 ...	2 ...	1
"	13 ...	2 ...	2
"	8 ...	2 ...	3
"	5 ...	3 ...	1
"	5 ...	3 ...	2
"	1 ...	3 ...	3
"E" Preliminary	6 ...	1 ...	2
"	14 ...	1 ...	3
"	7 ...	2 ...	1
"	14 ...	2 ...	2
"	8 ...	2 ...	3
"	9 ...	3 ...	1
"	6 ...	3 ...	2
"	7 ...	3 ...	3
"B" Signalmen...	1 ...	1 ...	1
"	3 ...	1 ...	2
"	6 ...	1 ...	3
"	17 ...	2 ...	2
"	26 ...	2 ...	2
"	26 ...	2 ...	3
"	35 ...	3 ...	1
"	25 ...	3 ...	2
"	16 ...	3 ...	3

On pages 19 to 24 inclusive are given some of the questions which were given at the last examination.

SESSION 1912-1913.

The interest taken in connection with the Lectures and Demonstration given at the School of Signalling continues to increase, as will be seen by the number of Students attending the lectures in connection with the present Session as shewn below:—

Class.					Number of Students.
SIGNALMEN	...	...	...	...	497
"C" PRELIMINARY	...	...	...	...	577
Block Regulations.					
"B" INTERMEDIATE	...	...	...	...	112
Block Regulations.					
Signalling Arrangements.					
STATION MASTERS	...	...	...	...	82
Block Regulations.					
Signalling Arrangements.					
"A" ADVANCED	...	...	...	...	40
Block Regulations.					
Signalling Arrangements.					
Wrong Line Orders.					
Book of Rules and Regulations.					
"HONOURS"	...	...	...	...	7
Block Regulations.					
Signalling Arrangements.					
Single Line Working Arrangements.					
Wrong Line Orders, etc.					
Electric Tablet Regulations.					
Appendix to the Book of Rules and Regulations.					
Total	...	...	...	...	1,315

EXAMINATION QUESTIONS.

CLASS A.—(Advanced)

Section I.

QUESTION No. 1.—Maximum number of marks allotted ... 50

Explain the different Wrong Line Order Forms, and when they are used.

QUESTION No. 2.—Maximum number of marks allotted ... 50

What do you know of Rule 55?

QUESTION No. 3.—Maximum number of marks allotted ... 50

Explain Station Yard Working.

QUESTION No. 4.—Maximum number of marks allotted ... 50

Is there any circumstance in which a Junction Signaller may accept a Train from the rear, which has to pass over facing points, when the line on which the Train has to run is not clear a quarter of a mile ahead of the Home Signal?

If the Signal Box in advance is less than a quarter of a mile ahead, when may permission be given for a Train to approach from the box in the rear?

Can the line inside the Home Signal be obstructed at a Box other than a Junction by a Goods Train, Light Engine, or Coaching Stock Train when permission has been given for a Goods Train, Light Engine, or Coaching Stock Train to approach from the rear Box?

Can a Signaller at a Junction allow a Goods Train, Light Engine, or Coaching Stock Train to leave a Loop Line or Siding during the time a Goods Train, Light Engine, or Coaching Stock Train is approaching?

What is an Advanced Starting Signal?

Where Station Yard Working is in operation and the line on which a Train is required to run is already occupied, how should such a Train be allowed to enter the section?

May a Signaller shunt outside the Home Signal in all cases if he can obtain the necessary permission from the rear?

If a Train breaks down in the section in advance, and before "Train out of Section" has been received for it, and if the Fireman or Guard comes back asking for an Assistant Engine, or for the Break-down Vans, what should be done?

If the "Cancelling" Signal is received from the Signal Box in rear when the block instrument shows "Line clear" or "Train on Line," what action should be taken with the block instrument?

If a Goods Train for which the "Is line clear" Signal has been sent forward and acknowledged disposes of its load at a Signal Box, and only the Engine or the Engine and one or two Break Vans goes forward, what is to be done?

If a Train is running between a Box and the Box in advance when the first-named Box is switched in, and afterwards "Train out of Section" for it is received from the Box in advance, what should be done?

CLASS A.—(Advanced)

SIGNALLING ARRANGEMENTS.

Section II.

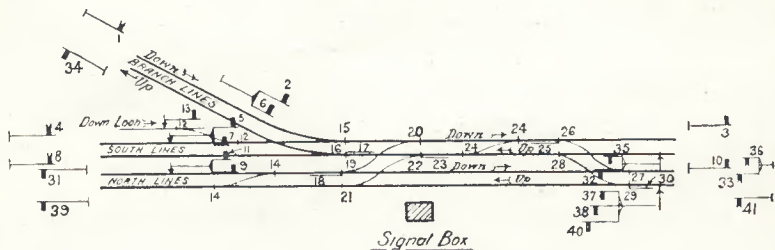
QUESTION No. 5.—Maximum number of marks allotted ... 50

What names are given to the different types of signals used on Railways? State the conditions which govern the names given to the respective signals.

QUESTION No. 6.—Maximum number of marks allotted ... 100

Insert the names and functions in the Schedule of the Points and Signals on the diagram printed below, and say if you would provide any additional signals, and why.

DIAGRAM.



SCHEDULE.

Number.	Name of Signal, &c.	Function of Signal, &c.

QUESTION No. 7.—Maximum number of marks allotted ... 50

What do you know about the Distant Signal? Also explain the different signalling arrangements adopted where the sections are only short in providing and working of Distant Signals.

CLASS B.—Signalmen.

QUESTION No. 1.—Maximum number of marks allotted ... 30

State the varying conditions under which a Signalman may forward or receive the Obstruction Danger Signal, and in giving examples say how you would act under each of the circumstances.

QUESTION No. 2.—Maximum number of marks allotted ... 20

Under what circumstances can the Cancelling Signal be given, and what action should be taken by the Signalman forwarding and by the Signalman receiving the signal?

QUESTION No. 3.—Maximum number of marks allotted ... 25

What is a Station Yard Working? What is its object, and in what respect are the ordinary regulations modified where Station Yard Working is in force?

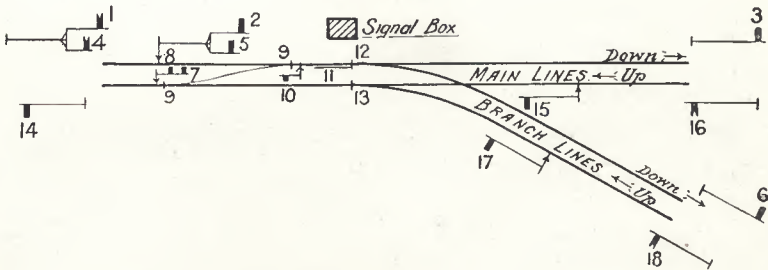
QUESTION No. 4.—Maximum number of marks allotted ... 35

What names are given to the different types of signals used on Railways? State the conditions which govern the names given to the respective signals.

QUESTION No. 5.—Maximum number of marks allotted ... 25

Insert the names and functions in the Schedule of the Points and Signals on the diagram printed below.

DIAGRAM.



SCHEDULE.

Number.	Name of Signals, &c.	Function of Signal, &c.

QUESTION No. 6.—Maximum number of marks allotted ... 15

If the Signal Box in advance is less than a quarter of a mile ahead, when may permission be given for a Train to approach from the Box in the rear?

Can the line inside the Home Signal be obstructed at a Box other than a Junction by a Goods Train, Light Engine, or Coaching Stock Train when permission has been given for a Goods Train, Light Engine, or Coaching Stock Train to approach from the rear Box?

If the "Cancelling" Signal is received from the Signal Box in rear when the block instrument shows "Line clear" or "Train on Line," what action should be taken with the block instrument ?

If a Goods Train for which the "Is Line clear" Signal has been sent forward and acknowledged disposes of its load at a Signal Box, and only the Engine or the Engine and one or two Break Vans goes forward, what is to be done ?

