

## Electronic delivery of quizzes

1. This note describes the system recently introduced by the Quiz League of London (QLL) by which most quizzes are downloaded from the internet and read on an electronic device, rather than hard copies being posted to each venue. Other leagues may wish to adopt or adapt this system.

### Reasons

2. QLL negotiated a new contract with its setters in 2012, and the cost of sending out copies of the quizzes to each venue arose as a significant issue. First class post had recently increased to 60p, and we estimated that the cost of consumables (paper, envelopes, labels and printer ink) was almost 50p per delivery. This meant that the total cost of hard copy delivery for a full season was around £300, not counting the labour involved in copying, collating and stuffing envelopes.

3. Also, we had experienced occasional problems with postal strikes and late delivery. With the decline of the letter as a medium and the prospect of privatization, these issues seemed likely to get worse.

4. We therefore decided to develop a system to enable as many quizzes as possible to be delivered and read electronically, without the need for a hard copy.

### Summary

5. In summary, the system works as follows:

- The setters convert the quiz into a PDF which is password protected with a random alpha-numeric password of 16 digits.
- The quiz is posted on a dedicated page on the setters' website during the day when it is due to be played.
- About half an hour before the start time, half the password is texted to the home team and half to the away team. All teams provide a preferred mobile number for the season which can be changed *ad hoc* for particular fixtures.
- The home team is responsible for providing an iPad or similar device. When they are ready to start, the teams reveal their halves of the password and the QM opens the PDF.

### Detail

6. Most modern word-processing applications can convert a document into a PDF with a password (128-bit encryption level) to open it. Alternatively, this can be done with Adobe Acrobat or FoxIt.

7. Free random string generators can be found online to create the password. QLL uses a 16 digit case-sensitive alpha-numeric password, excluding a few easily

confused characters from the set (0, O, 1, l and I)<sup>1</sup>. This number of characters (57) and length of password precludes any possibility of cracking the password by force after a team's half-password has been received.<sup>2</sup> The full password would take many years to crack, which means that links to the quizzes can be posted well in advance (e.g. if they are to be played by several leagues on different days) and left up indefinitely without risk of unauthorised use or copying.

8. A link to the password-protected PDF file is posted on a dedicated website page. This enables teams to bookmark the page and find the quizzes easily each week. Posting the link at a set time earlier in the day means that the password-protected PDF file can be downloaded onto the reading device at home or work. The system is therefore not dependent on wi-fi or 3G access at the venue itself.

9. Half of each password is texted to a mobile number provided by each team – the first 8 digits to the home team and the second 8 digits to the away team. The texts are sent 20-30 minutes before the matches are due to start. This allows for slow/busy networks and provides some flexibility if a venue has a poor 3G signal.<sup>3</sup>

10. The QLL website has a database containing fixture and team details. This is used to generate a table showing the full list of mobile numbers to be sent the home and away halves of the password. The person responsible for sending the texts can access this on a password-protected website page. When necessary, the database can be amended, if a team gives sufficient notice, to change its mobile number for a particular fixture. This feature is not essential – it would be possible to keep track of the necessary mobile numbers manually, and that approach would no doubt be preferable for smaller leagues with less sophisticated websites.

11. Generally, the home team is responsible for providing a suitable device for reading the quiz, and also for bringing along hard copy scoresheets (which can be downloaded from the QLL website)<sup>4</sup>. Teams that do not have access to a device are, by default, excluded from the system and sent a hard copy quiz. However, they are encouraged to contact their opponents a week in advance to see if they can provide a device. If so, the database can be amended so that a hard copy is not posted, but passwords are texted.<sup>5</sup>

---

<sup>1</sup> Zero, u/c O, one, u/c l (eye), l/c l (ell).

<sup>2</sup> Automated password crackers are available online, and could crack a password with 6 known and 6 unknown digits in the time available. A minimum 7-digit half-password is necessary to ensure security.

<sup>3</sup> When problems have arisen, usually when a team has failed to notify a change of mobile number, these have been resolved by phoning other teams or a central contact who is sent the full password 5 minutes before start time.

<sup>4</sup> Teams are advised to keep a stock of scoresheets at their venue, and to ensure devices are fully charged before the fixture.

<sup>5</sup> Similarly, given sufficient notice, a fixture can be excluded from the system and sent a hard copy if the usual reading device will not be available that week.

12. The quiz documents all include a cover sheet before the first page with questions.<sup>6</sup> This is to allow for a QM who may be unfamiliar with the reading device. It allows a participant to assist the QM to download the quiz, enter the password and open the document.<sup>7</sup>

13. QLL developed and tested this system with 4 pilot teams during the early part of its 2012-13 system. Other teams were asked to volunteer to take part (for home fixtures) in the latter part of that season and about half did. We also used the system in our 3-venue Summer Friendly League, and another tranche of teams signed up for the start of the 2013-14 season. We now have only about 4 teams who do not regularly use the system, mainly due to lack of a device, and less than 20% of 2013-14 matches required a hard copy.

### Suitable devices

14. Quizzes can be downloaded and read using a laptop, iPad or similar tablet device. These usually have PDF readers as standard, and these are straightforward to download if one is not already installed.

15. Quizzes can also be read on SmartPhones, although these are not ideal, and not suitable for long-sighted QMs. It is also more likely with a SmartPhone that the QM will scroll down too quickly and miss out some questions. However, most SmartPhones (and tablets) include an e-reader application which makes scrolling and reading safer and easier. For example, on an iPhone, the option to open the PDF in iBooks is offered, and we believe that most people will find this preferable to the default application.

16. Although Kindles include basic web browsers, it is not possible to download a PDF directly to a Kindle. However, it is possible to email a PDF to a Kindle as an attachment; the PDF then appears automatically as a new 'book' on the Home page. To use a Kindle to read a quiz, you would first need to download it in advance onto a computer (or tablet) and then email the PDF to your Kindle email address.<sup>8</sup>

## **Quiz League of London March 2014**

---

<sup>6</sup> This is blank apart from the date of the quiz and a statement that it's a cover sheet.

<sup>7</sup> Care still needs to be taken with tablet devices that automatically show two pages of a document when turned to a landscape orientation. QLL's guidance to teams deals with this point.

<sup>8</sup> This cannot be done over a 3G mobile network.