

The JAA (Joint Aviation Authority) lays down strict rules for the production of theoretical examination and conduct of exams for pilot licensing. JARFCL EMS is an examination management system which automates every part of the examination process including importing of the JAA CQD (Central Question Databank) from CD Rom, generating MCQ (Multiple Choice Questions) exams, storing results and producing reports.

Product Overview

The main functionality of the system can be summarised as follows:

- Import JAA questions as supplied on CD-ROM from time to time.
- Generate draft examinations.
- Modify draft exams e.g. replace one or more questions.
- Sign-off and prepress.
- Print individualised exam papers (one per applicant) and solution sheets.
- Maintain complete records of applicants (exam results, dates, e.t.c.)
- Produce school, NAA and JAA pro forma reports.
- Maintain and print on-demand graphic images, tables etc. required for examinations.

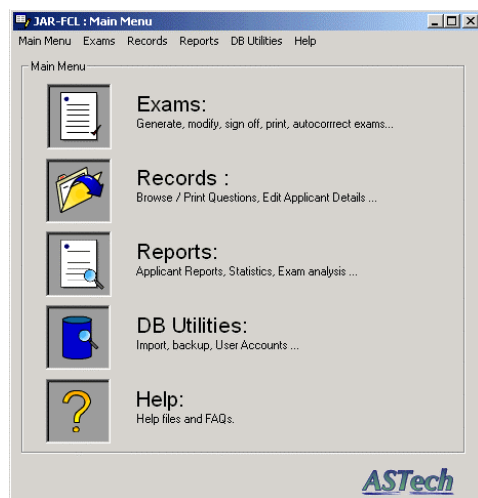


Figure 1: Main Menu

Operation

ASTechs JARFCL EMS provides an intuitive interface and incorporates a main menu allowing access to any of the functionality at any stage. An On-Line help file, accessible from the main menu, ensures that instructions on using the system are always accessible.

The following sections describe typical usage scenarios with the aid of sample screen shots of the user interface.

Generating Exams

The steps involved in generating exams are as follows:

1. Schedule a New Exam: User sets the criteria (exam type, aircraft type, subject) on which the new examination will be based. After setting a date/time for the new exam, it can be saved to the database.

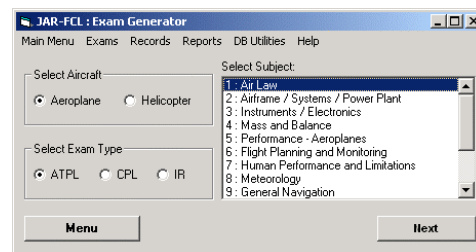


Figure 2: Setting Exam Details

2. Select Exam Questions: The system randomly selects suitable questions for a pre-saved examination specification based on JAA regulations with regard to allowed time, topic level question distribution e.t.c. The user is then presented with a breakdown of the number of questions chosen from each topic for the selected exam. The printed examination is presented as a pdf document with all Adobe Acrobat Reader functionality available.

3. Modify Schedule / Question List: Using this feature of the system, the user can edit the scheduled date, time or question list for any examination.

4. Assigning Applicants: The list of applicants assigned to sit an examination can be created or edited at any stage. The system provides a list of eligible applicants from which the list of applicants scheduled to sit the exam is assembled.

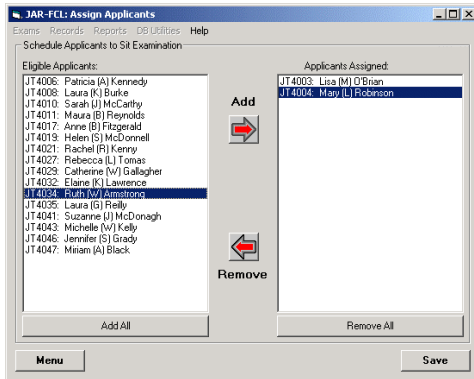


Figure 3: Assign Applicants to sit Examinations

5. Sign-off / Print Exam: When a final draft exam has been decided on, this utility allows the user generate pdf exam papers for each applicant scheduled to sit the examination (the order in which the questions and possible answers appear on each students examination paper is shuffled).

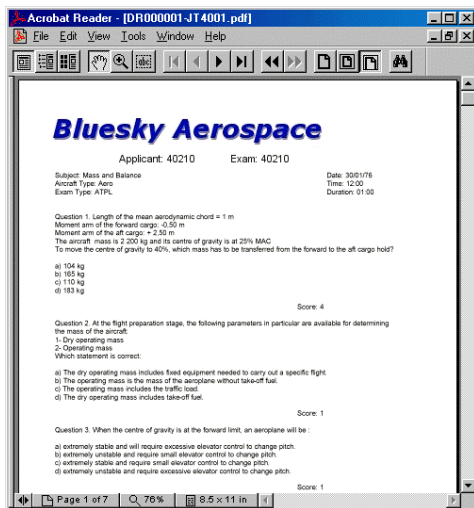


Figure 4: Sample Exam Paper in pdf format

6. Auto-Correction of Examinations: ASTechs JARFCL EMS can be used with both manual and automatic correction. In the case of automatic correction an OMR (Optical Mark Reader) is used.

Browsing Records

Utilities for browsing / printing records include:

1. Question Browser: The question browser (see Figure 5) allows viewing of any subset of the JAA question bank and can be filtered according to Aircraft Type, Exam Type, Subject and Topic.

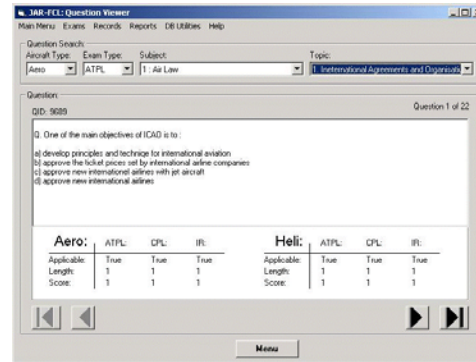


Figure 5: Question Browser

2. Question Printer: A tree like structure which represents the IAA question databanks (See Figure 6) subject and topic structure is used to select a subject or topic from which questions are to be printed. The printed questions are presented in pdf format.

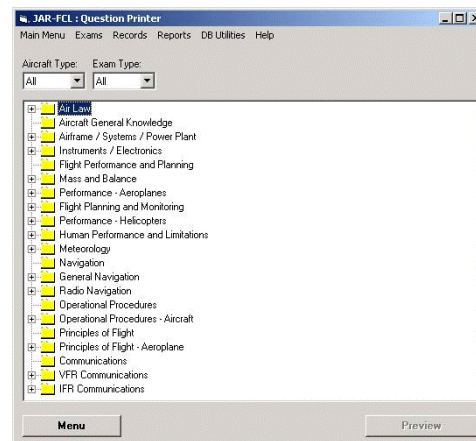


Figure 6: Question Printer

3. Maintaining Applicant Records: The system includes utilities for viewing, adding to, editing and deleting applicant records.

Reports

Reports are presented in pdf format and can be customised to highlight any aspect of exam or applicant records (e.g. How applicants performed in a particular exam or exam question).

Some sample reports are shown in Figure 7.

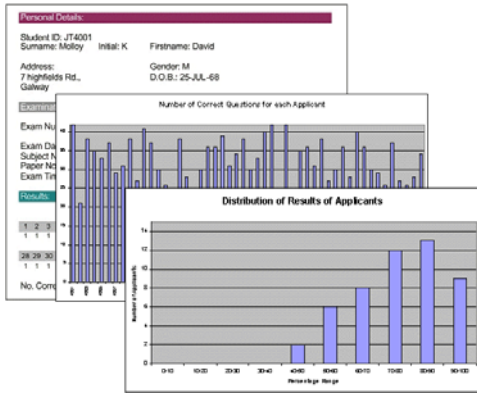


Figure 7: Sample Reports

Annex Material

Many of the questions in the JAA CQB reference maps charts and schematic diagrams collectively known as annex material. When printing finished exam papers the system will also create pdf documents for all the required annexes needed for the current exam. Some sample annex material is shown in Figure 8 below.

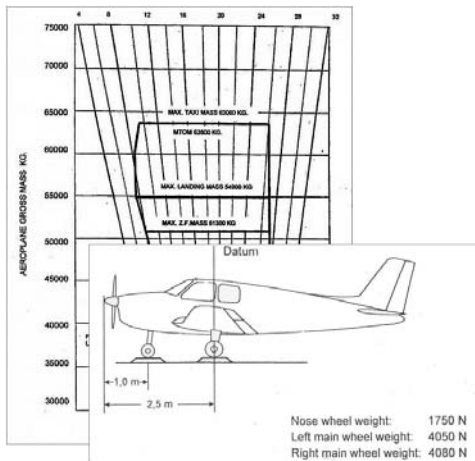


Figure 8: Sample Annex Material

Hardware & Software

ASTech have extensive experience in delivering both paper based and on-line examination systems using a variety of hardware and software configurations. ASTech's recommendation for the system is as follows:

Software

- NT or Windows 2000 Operating System.
- Industry standard SQL database (e.g. Oracle 8i or Microsoft-SQL Server Personal Edition).

- Visual BASIC (VB) front-end.
- Adobe Acrobat for paper review.

Hardware

- DELL Workstation
- RW CD-ROM (for backup)
- 17 inch monitor
- Lexmark Laser Printer
- Optical Scanner (include own graphics)
- OMR hardware

A schematic of the proposed systems architecture is shown in Figure 9.

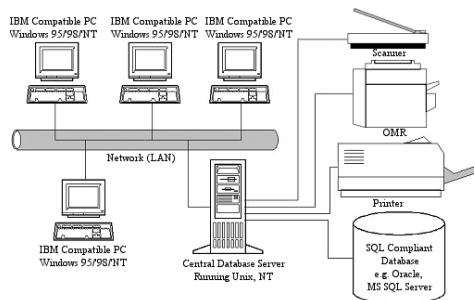


Figure 9: System Architecture

Contact Us!

ASTechs experience in JAR examinations covers Basic, Type Specific and JAR-FCL type examinations. Our software has been used in successful national and JAA audits.

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