

The National Pipe Organ Register 2012 to 2016

The evolution of the National Pipe Organ Register during its first 20 years is described in JBIOS Volume 36 page 143 et seq. (2012). Since 2012 there have been major changes which are worth recording in the Journal. The most significant change is in the way that organ descriptions (surveys) are now held in the database in XML format, about which more later.

In 2012 the NPOR server was in the care of the Royal College of Music (RCM). Regrettably, the interests of the RCM and BIOS as regards the future of the NPOR diverged and so in January 2013 it was repatriated to Emmanuel College, Cambridge where it was re-united with the computer it had left in December 2008. The service has been supplied from Emmanuel from then until August 2016 when it moved to the care of the web site developers who maintain the web site for the Royal College of Organists (RCO) and I have relinquished responsibility for the maintenance and development of the system for the first time since 1990.

Since July 2012 the Manager has been Andrew Macintosh, who is sub-contracted from the Royal College of Organists (RCO) by BIOS and there is a new Steering Committee formed of representatives from both BIOS and the RCO. The link with the BIOS Council is provided by Mark Venning and Alan Thurlow. A very important recent initiative has been to put in place a much more visible reminder on the web site of the funding needs of the NPOR. The response has been very gratifying and will help considerably with the costs associated with the NPOR's new home with commercial suppliers.

The contents of the NPOR

It is interesting to look at the present state of the content of the NPOR. I am grateful to Barnaby Page for providing the stimulus to investigate the potential for data mining. The NPOR contains 35,579 surveys, each representing a snapshot of the specification of an organ at a particular point in time. Some organs are well documented and it is possible to see how they developed through the sequence of surveys. Most organs have only one survey which, hopefully, presents the present state. There are 26,937 buildings noted in the NPOR as containing an organ at some time and, of these, 21,934 are recorded as not having been “destroyed”, “transferred”, “broken up” or “no longer present”. There is a surprisingly large amount of recent activity with 5,522 organs recorded as having had work done since 2000.

If one looks at organs for which we have recent surveys there were:

- 3,718 with 32 foot stops (many may be stopped pipes or acoustic resultants),
- 4,133 with mixtures and
- 7,132 with at least one reed.

The most common organ has around 10 stops spread over two manuals but there are nearly 1,000 with 30 or more stops. One manual organs account for 20%, two manuals for 60% and 3 manuals for 15% of the total.

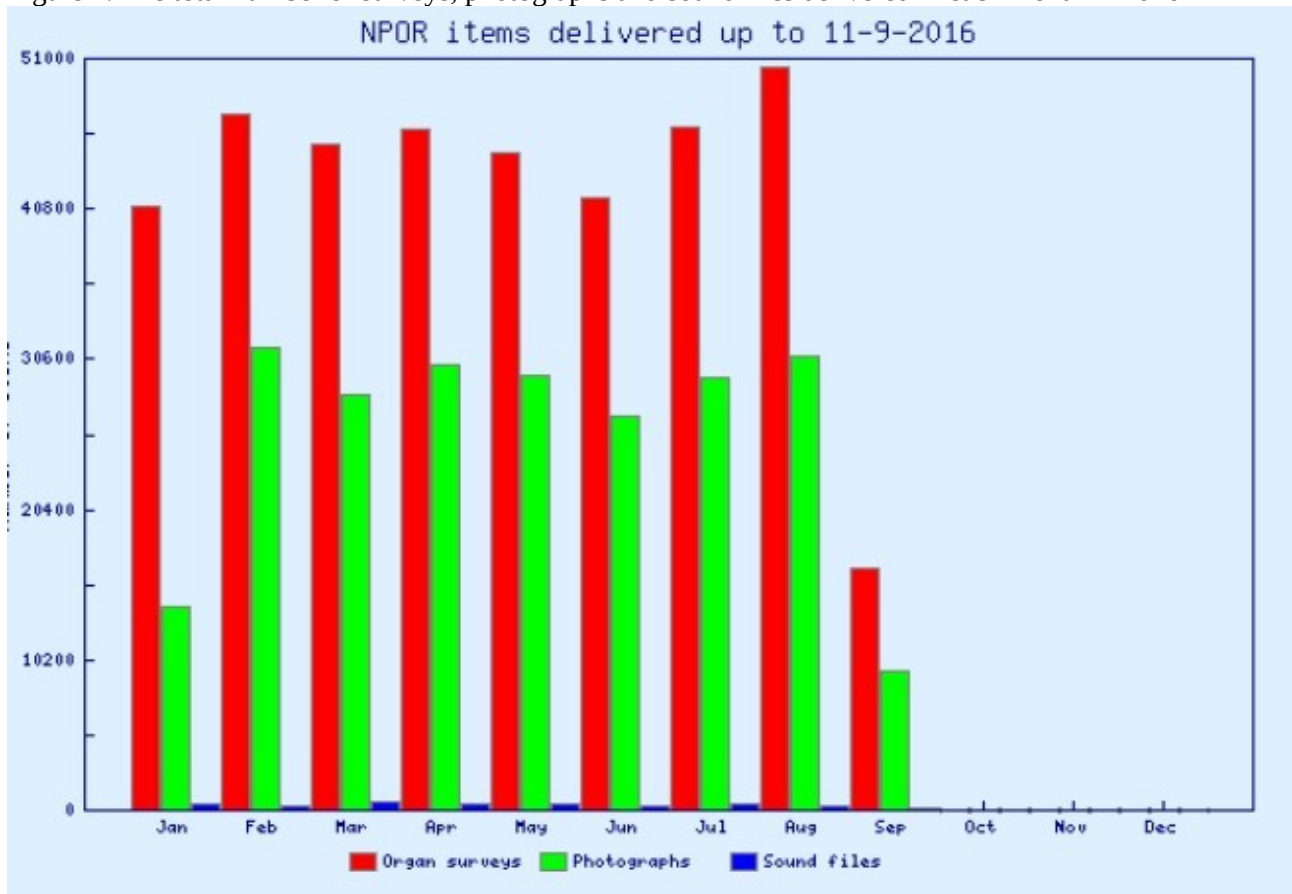
Since the previous JBIOS article, the NPOR has expanded its coverage and its accuracy. Since 2012, 325 buildings containing organs, 648 new surveys and 3,337 photographs have been added. There has been much work on correcting and updating the contents of existing surveys with 5,716 being changed in that period.

BIOS grants Historic Organ Certificates (HOC) to organs containing a significant amount of material of historic interest. These are flagged in the NPOR and can be searched for either nationally or in a particular region. In 2012 there were 1,014 organs listed as having a HOC and by 2016 this had increased to 1,130. Much effort was expended towards the latter part of 2015 and the early part of 2016 to ensure that the surveys in the NPOR for these organs were up to date. During 2016 BIOS will begin a scheme to list organs which are at risk of loss or destruction and provision has been made in the NPOR to flag these with an “At risk” symbol.

The activity on the NPOR

The bar graph in figure 1 shows how many specifications (surveys), photographs and sound files were delivered in each month in 2016.

Figure 1. The total number of surveys, photographs and sound files delivered in each month in 2016



We are very fortunate in having an experienced and enthusiastic team of editors managed by Andrew Macintosh. The NPOR team are shown in the picture (figure 2) at a meeting in Emmanuel in October 2014. Around the table from left to right are Paul Houghton (Manager 1992-2005), Paul Ebling (Editor), Andrew Macintosh (Manager from 2012) Jeff Dauvin (Editor), Mike Sayers, Richard Hird (Editor), Graham Jones (Editor) and the Rev Tony Newnham (Editor). In the background are Mark Venning (NPOR Steering Committee) and David Greening (Editor). Editors not able to be present include David Force, Jeremy Wong, Matthew Hynes and Richard Moore.

Increased usage of the NPOR has led to an increasing number of contributions of additions and corrections. However, partly as a result of the introduction of the new on-line submission form (see below) but mainly due to Andrew Macintosh and the editors, the backlog of material waiting for inclusion has reduced significantly during the past two years and is still heading downwards.



Figure 2. Some of the NPOR team at Emmanuel College in 2014.

The result of the efforts of the Editors can be seen in figure 3.

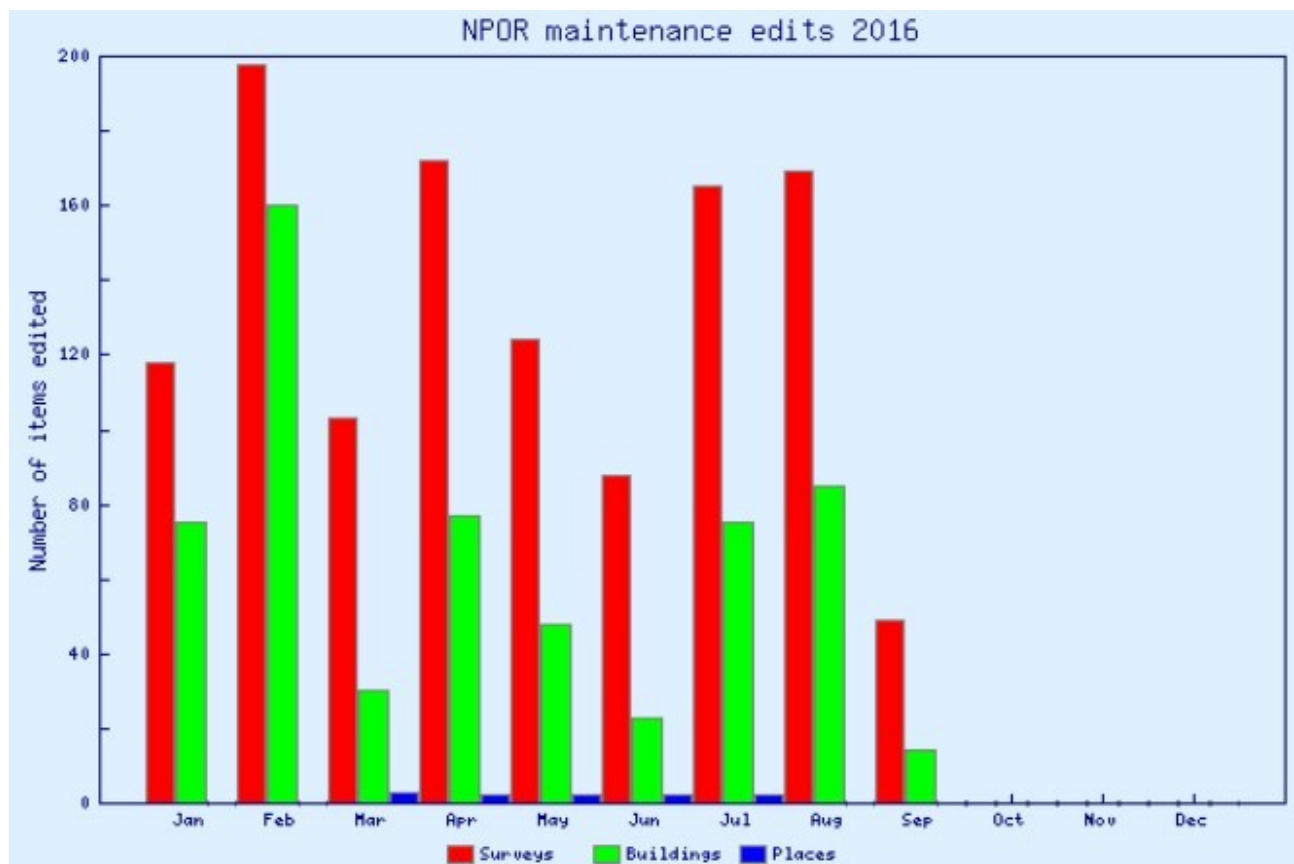


Figure 3. The total number of surveys, buildings and places in the NPOR edited during 2016.

The new user interfaces

As part of the work to implement the new XML based structure of the NPOR (about which more later), the user interface programs which format and display the information in the browser and interact with users and editors have been completely re-written. Screen shots of the user interface (figure 4) and the Editors' interface (figure 5) are shown below.


The main change to the “look and feel” of the user page is that the “pull-down” menus have been replaced by static ones which appear when one of the tabs along the top are clicked. Clicking one of the static menu items causes the main part of the page to be replaced with a form which is specific to the search being requested. Under the bonnet, as it were, the code is completely different from the 2012 version.

The National Pipe Organ Register (NPOR) V2.15


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 The National Pipe Organ Register (NPOR) is provided by the **British Institute of Organ Studies (BIOS)**.

The NPOR contains details of 35,000 organs including 10,000 pictures and 260 sound recordings. Search for information about an organ by choosing a search option from the **Search the NPOR** menu tab above.

Our Historic Sound Archive contains recordings of historic organs using music suitable for the period when the organ was built. Find out more about organs for which sound files are available by clicking the **Sound Archives (HOSA)** tab above. A [HOSA CD](#) is available. 

 BIOS awards Historic Organ Certificates to organs of especial historic interest. Search for details by clicking the **Search the NPOR** tab above.

The archive section of this site contains an index to the material in the British Organ Archive and a Directory of British Organ Builders (up to 1950). Find these by selecting **Document Archives** or **Organ Builders** from the tabs above. 

See here [for notes](#) on using and linking to the NPOR and here for [activity graphs](#) of usage and maintenance of the NPOR databases.

The British Institute of Organ Studies (BIOS) owns the NPOR, the Historic Organ Sound Archive (HOSA), the Directory of British Organ Builders (DBOB) and the British Organ Archive (BOA). The content and hosting of the NPOR are managed under an agreement with the Royal College of Organists (RCO).

Please make a donation! The NPOR is a free service provided by BIOS for everyone interested in the organ and its history. Our charitable organisation must find nearly £8,500 annually to run this service and to keep the database on line for you. We badly need help in covering this cost, and we ask all users of NPOR to make a donation that reflects the amount of use and the value you put on it. A donation of just 50p for each use would be very helpful. All individual donations, however small, will be gratefully received by BIOS. Even better, please consider signing up for regular donations and thus help to secure the future of NPOR. For more information and to donate, [please click here](#).


 [Click here](#) for information about the NPOR, how to contact us and our privacy policy. | ©2015 Dr M D Sayers

Figure 4. The user interface.

In 2016 two new search types were added. The first enabled a search for organs which have been recorded as being “at risk” by the scheme announced at the BIOS Conference in 2016. The second, labelled “Advanced Search”, is a preliminary attempt at a data mining exercise and enables a search for organs with particular attributes including the number of manuals, the number of stops (in bands), whether it has pedals, the lowest manual key and whether it has a HOC in addition to the usual geographic constraints and the name of a builder associated with it.

The user interface for the Editors has been completely re-organised with buttons for the functions and no pull-down menus. The code has been completely re-written with much more checking and validation of input being performed in the browser before requests are transmitted to the server. Extensive use is made of help buttons on each page which are specific to the function and the field on the page.

The National Pipe Organ Register (NPOR) from the British Institute of Organ Studies (BIOS) BIOS Website

Npor editors' survey submission and edit form V2.31

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User name

Password

Survey functions

Place functions

Building functions

Archive functions

History functions

Miscellaneous functions


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Figure 5. The Editors' interface.

The on-line Submission Form

For much of the time there has been a constant backlog of contributions awaiting the attention of the Editors. Clearly, anything which can simplify the task of an editor is worth consideration. One of the tedious parts of the Editors' job involves copying the information received by e-mail or on paper into the NPOR Editing program. Towards the end of 2015 we introduced a new means of submitting information which enabled contributors themselves to fill up (or edit) a copy of a survey using a simplified version of the Editors' program. The "Submission Form" contains more extensive help text, less free choice text and more selection of pre-set options and much more validation of input than the Editors' form from which it was derived. The Submission Form allows the creation of a survey from scratch as well as the ability to edit an existing survey. The output from the form is a file of text in XML format which can be e-mailed to the NPOR Manager, together with any photographs submitted as e-mail attachments. Since the content of the XML has the same structure as a survey held in the database, it can be directly inserted by an Editor and then tidied up as required. After a few teething troubles this new "fast track" method of supplying contributions seems to have settled down well and we are pleased with the result.

In order that the reader may form an impression of this method of submission, the beginning of the front page of the Submission Form is shown in figure 6.

The National Pipe Organ Register (NPOR)

Contributors on-line information submission form V2.09

If you use Internet Explorer you need IE10 or later.

You are invited to send information to the NPOR using this on-line form which will facilitate the work of the NPOR editors and should lead to a faster turnaround.

Some information about you

Your name: Required

Your address:

Your e-mail address: Required

Your telephone number:

Surveyor code (if you know what this is):

Please click which of the following options best describes your information. This will help the editors to deal efficiently with your input.

- I am providing details of an organ which currently does not feature on the NPOR (New survey).
- I am providing details of the transfer of an organ from one building to another (New survey).
- I am correcting a survey which has been entered incorrectly on NPOR (Amend survey).
- I am providing additional information for an organ currently featured on NPOR (Amend survey).
- I am providing details of a rebuild or alteration to an existing organ on NPOR (Amend survey).
- I am providing photographs only for an existing organ on NPOR.

Give any additional information in the box below, such as your connection with the organ (organist, builder, tuner, historian) and anything that may help the NPOR editors but which is not specifically asked for in the on-line form. Please **describe the source** of your information. If you cite builders please explain the source for dates etc. If this is an edit, please explain what you are adding or correcting and what evidence or source you have for the information.

To submit a survey of an organ not presently in the NPOR or substantially changed, first try to find the address of the building by typing some keywords from the address like the building name (without "St" or "church" etc.) and town then click "Search address". If the building does not appear in the list, try just typing the town (or village or suburb name) and click "Search address" again. If the building still isn't available in the list, type the town and click "Search town"



Figure 6. The front page of the Submission Form after selecting the option to supply information about an organ not currently listed.

After giving personal information so that the contributor can be reached and information regarding the type of contribution and the source of the information, a formatted screen for input is displayed. The page expands to figure 7 when the contributor wants to describe an organ which was not previously known to the NPOR. If an edit, rather than a complete survey, is requested then the boxes are initially populated by the contents of the existing survey.

Figure 7. The submission form after opting to supply new information about an organ.

Address information [Help](#)
Building name:
Address:
Town:
Historic county:
County:
Suburb:
Building type:
Post code:
Grid reference:
Building state:
Place type:

Building and general information [Help](#)
Survey date (year): **Required**
Organ (eg Nave, Choir):
Maintained by:
State:
HOC date:
HOC grade:
No of manuals:
Pedals:
No of speaking stops:
Photograph:
Reference:

Builder information --- Click "Add builder" to get blank record. [Help](#)
[Add builder](#)

Case information --- Click "Add case" to get blank record. [Help](#)
[Add case](#)

Console information --- Click "Add console" to get blank record. [Help](#)
[Add console](#)

Departments and stops --- Click "Add Department" to get blank record. [Help](#)
[Add department](#)

Details section [Help](#)
Blowing (e.g. electric, manual, hydraulic):
Tuning scheme (e.g. Equal temperamant, Valotti):
Pitch (e.g. A=440):
Wind pressure (e.g. 4 ins. flues, 8 ins. reeds):

Accessories information [Help](#)

Additional information [Help](#)

Photographs [Help](#)
[Add additional photograph](#)
Existing picture information cannot be edited.
When inserting a picture, fill in number, the year and caption first and then browse for the picture file. When you submit your survey, the picture files you have chosen will be e-mailed to the NPOR Manager as attachments along with your survey. Picture files must be less than 128K bytes in size.

If you require a copy of your submission to be copied to your email address please tick here.

[Send your completed survey](#)

The structure of the NPOR – the new XML format

It had been apparent for some time that the NPOR database was top-heavy in the number of separate tables from which information needed to be extracted to compile a specification. Although this made it easy to write complex queries to extract information, the drawback was that common queries required a number of inefficient table joins and quite a lot of code. Also there was no clear separation between the extraction of the information and the presentation and formatting since all of it was done on the server. During the past 50 years the balance between the capabilities of servers and those of workstations (and now tablets) has changed many times as processor speeds and network bandwidth and response times have increased. It seems at present that it is worthwhile structuring a system so that the database and the functions required to manage and interrogate it are provided on the server and the program for displaying and formatting the information obtained resides in the browser on the user's device. Even smart-phones now have the capacity to run quite large and complex programs so quite a lot of work can be done in the user device.

Until my re-write of the NPOR software in 2013 most of the work was done by programs running in the server and, having formatted the information, sending it to the user's device in html, a low-level encoding, which was interpreted by native code provided with common browsers such as Internet Explorer, Firefox and Safari. The 2013 re-write used XML, a bespoke version of a general communication format which is common in commercial data processing, as the communication format between the server and the user's device. The number of separate programs running on the server was reduced from dozens to just three, one for the public system, one for the on-line submissions and one for the editors' maintenance system. Similarly there are just three programs to run in the user's browser, one for the public interface, one for the submission form and one for the editors' maintenance interface. The browser programs are written in JavaScript which is available in all modern browsers.

I had been considering the way organ descriptions (surveys or specifications) are held in the database. Before 2013 each of the components (builders, cases, departments, consoles, stops and accessories) were held in a separate table plus a table for the address information. After a database search all these separate pieces of information had to be collected, formatted and sent to the browser. It seemed that it would be more efficient, and more robust, if each organ description, let us call it a survey, were a complete document. Thus the database would in essence consist of a table of survey documents plus whatever other information was required to enable searches, such as the address information. Clearly the survey document would need to be encoded in a way which made transmission to the browser efficient and which enabled the browser to format it for the user. A good example of the use being made of this structured document is provided by the information being displayed quite differently when sent to a user than when being sent to an editor although the actual document is the same. I chose XML as the format (a structured mark-up language) in which to hold and transmit survey documents. I thought there might be other uses for a structured organ description language, such as transferring descriptions between databases and, indeed, I have used it subsequently in the on-line submission system.

XML consists of "elements" containing properties and free text written as

```
<Element property="value".....>free text</Element>
```

where the closing bracket can be abbreviated to `/>` if no free text is enclosed. Elements can contain other elements as in the example where **<Stop** elements are contained within **<Department** elements.

The XML for M00001 in the NPOR is shown below.. Some text has been omitted and abbreviated to a string of dots. New lines and bold and italic formatting are not part of the actual XML. They are just used here for clarity. **<Picture** elements contain, as free text, the "BASE64" encoding of the thumbnail but the actual picture is held in a separate table since otherwise it makes the XML too large to be manageable.

<Survey>

```
<Properties rec_index="M00001" survey_date="2009" qualifier="" record_type="" manuals="3"
stops="21" maintainer="Peter Bumstead" photograph="Y" audiofile="" score="" source=""
input_date="02-10-2014" input_by="MDS" book="" reference="" state="Organ maintained"
pedals="Y"/>
```

```
<History title="1849 Bishop, All Saints, Dorchester" ristring="K00228.N03046.M00001"/>
```

```
<Hoc grade="Certificate of recognition" date="2009"/>
```


<Builder date="2009" name="Peter Bumstead" address="Ipswich" firm_ref="" firm_style="" nodisplay="">

A new 3 manual and pedal organ was designed and built by Peter Bumstead mostly from restored pipes and soundboards from the earlier Harlton organ (see N03046) and the former Haslingfield organ (See N08078).

</Builder>

<Case name="Rev Osmond Fisher and Peter Bumstead" date="2007" address="" position="On West gallery" type="Architectural">

A new West gallery was built by F. A. Valiant and Sons Ltd. of Bury St. Edmonds to provide a platform for the restored 1869 case (see N03046). The case which formerly hung on the North wall was restored from impost level and above and was fitted with a new floor standing lower case designed by Peter Bumstead and built by the P & S organ supply company.

</Case>

<Console number="1" name="" shape="Attached" stop_type="Drawstops" label_type="" label_font="" pedalboard="Straight concave.">

The new 3 manual console was designed and made by Peter Bumstead. The stop jambs are flat on either side of and in the plane of the case.

<Coupler name="Swell to Great"/>

<Coupler name="Choir to Great"/>

<Coupler name="Choir to Pedal"/>

<Coupler name="Great to Pedal"/>

</Console>

<Department name="Pedal" number_keys="30" key_action="Tr" stop_action="Me" compass_low="C" compass_high="f1" enclosed="N">

<Stop number="1" name="Bourdon" pitch="16" remarks="H"/>

<Stop number="2" name="Principal" pitch="8" remarks="H"/>

<Stop number="3" name="Fifteenth" pitch="4" remarks="PB"/>

<Stop number="4" name="Bassoon" pitch="16" remarks="L"/>

</Department>

<Department name="Choir" number_keys="54" key_action="Tr" stop_action="Me" compass_low="C" compass_high="f3" enclosed="N">

<Stop number="5" name="Clarabella" pitch="8" remarks="Part H new treble"/>

.....

<Stop number="10" name="Cremona" pitch="8" remarks="PB"/>

</Department>

<Department name="Great"

.....

</Department>

<Department name="Swell"

.....

</Department>

<Details blowing="Electric" tuning="Equal temperament" pitch="" bellows="">

<Accessories>

4 Composition pedals and centrally balanced swell pedal.

</Accessories>

<Information>

In the stop list above the provenance of the pipes is indicated as follows:

O = Harlton; H = Haslingfield ; PB = other 19th Cent pipes; PB* = J.C. Bishop pipes; L = from Little St. Mary's Cambridge (See N05183).

.....

</Information>

<Picture number="1" date="2010" caption="Organ case (MDS)" size="81178">

/9j/4AAQSkZJ.....KiiimI/2Q==

</Picture>

<Picture number="2" date="2009" caption="Organ console (MDS)" size="91123">

/9j/4AAQSkZ.....gAooooA/9k=

```
</Picture>
<Picture number="3" date="2004" caption="Peter Bumstead's original drawing plan" size="52675">
/9j/4AAQ.....RQB/9k=
</Picture>
</Survey>
```

Since there can be a number of surveys describing the organ in a building at different historical times, the building and hence address information is held in a separate table indexed by the “building_index” which is itself held in a column of the table of surveys. The building information is also sent between the server and the browser in XML. The building XML for the survey above is shown below.

```
<Building address="Coach Drive" building_index="35472" county="Cambridgeshire"
grid_ref="TL387526" historic_county="Cambridgeshire" name="Assumption of the Blessed Virgin Mary"
place_index="14595" postcode="CB23 1ET" suburb="" town="Harlton" type="Anglican Parish Church"/>
```

As can be seen the XML is just about readable and in principle the text could be edited directly if required. Also it is relatively easy to generate by a program as it is by the browser program for the on-line Submission Form and by the browser program used by the Editors. The format is easily extensible and could be used to transfer organ descriptions between databases.

The on-line NPOR system consists of three linked sets of data: the NPOR itself, the Directory of British Organ Builders (DBOB) and the British Organ Archive Index (BOA). Records forming the DBOB and the BOA are also held and transmitted in XML in the formats shown in appendices A and B respectively.

The XML version of the database and its associated programs was introduced to the NPOR production system in September 2013.

The new “open source” Server system

Until 2016 the NPOR server was a Microsoft Windows Server 2008 system on which ran a Microsoft SQL Server 2012 Database (Express version). The server programs were written in the open source perl programming language. Discussions with the providers of the RCO's web site, who have taken over the NPOR service in 2016, made it clear that the cost of continuing to use proprietary Microsoft server software in a commercial environment would be considerable since the academic discounts on which we had relied hitherto would no longer be available. The alternative would be to use “open source” software based on the “linux” operating system and running the “MySQL” database software. Thus it would be necessary to convert our server programs to run in this new environment. I agreed that, in principle, this could be done and would be desirable but there were a number of technical challenges mostly concerned with the lack of XML functions which are present in SQL Server but not in MySQL and the different efficiency considerations applying to table joins.

It was fortunate that a spare computer became available as a result of an upgrade of University classrooms and I was able to develop a linux/MySQL version of the NPOR server environment on it. This actually took most of 2015, largely due to the complexity of the NPOR editing environment, but the live production system was transferred to it in January 2016, since when it has been running without any serious problems and with a level of performance at least as good as that of the previous system. An interesting sidelight is cast on the increase in performance of computers in recent years through comparison of the size of the old and new servers. In the picture in figure 8 the server which supplied the NPOR from 2005 to 2008 and from 2013 to the beginning of 2016 is the large floor standing box and the server supplying the new linux/MySQL version of the NPOR since January 6th 2016 is the small box on the shelf. The tall thin box on the floor is the uninterruptible power supply (UPS).



Figure 8. Comparison of the old and new server hardware.

The future of the NPOR

The NPOR is now secure in its new home so long as contributions are forthcoming to aid the cost of maintenance. The continuing quality of the NPOR is dependant on the dedication and expertise of the manager and the editors. BIOS is always mindful of the debt owed to them.

Development continues and since this article was submitted a link has been provided between the BOA index in the NPOR and the digitised images from Andrew Freeman's plates which are housed in the Cadbury Research Library at the University of Birmingham. The NPOR editing software has been extended to allow on-line editing of both the British Organ Archive records and those of the Directory of British Organ Builders.

M D Sayers Emmanuel College 2017

Appendix A – The XML format for records in the Directory of British Organ Builders (DBOB)

The record shown below is for John Crang. It can be seen that for this firm there are a two addresses, two styles of firm name and a number of references to it. The list of references shown below has been shortened. There are also two cross references to Hancock and Loosemore.

```
<Dbob-firm floruit="1745-1780s" located="London" firmref="558" established="" othernames="John"
successor="" antecedent="" born="" trade="ob" training="" surname="CRANG" died="" trading="p"
remarks="">
  <Dbob-address datefrom="1757" firmref="558" aliasno="1" dateto="" address="Wych Str, [The
White Lion], London [workshop]" houseno="" id="514"/>
  <Dbob-address datefrom="1763" firmref="558" aliasno="2" dateto="" address="Great Queen Str,
Lincoln's Inn Fields, London" houseno="" id="515"/>
  <Dbob-style firmref="558" name="John Crang" style="1" year="1763"/>
  <Dbob-style firmref="558" name="Crang & Hancock" style="2" year="1772c"/>
  <Dbob-reference firmref="558" reference="Country Life, 11.1980: Botting, M.C." refno="1"/>
  <Dbob-reference firmref="558" reference="BIOS Rep 01/1/p.9, 6/4/p.10 &
7/4/p.10:Edmonds, B.B." refno="2"/>
  .....
  <Dbob-crossref firmref="558" recno="" referencedfirm="971" referencedfirmname="Hancock,
James" relationship="partner to (& sister married)" remarks=""/>
  <Dbob-crossref firmref="558" recno="" referencedfirm="1367" referencedfirmname="Loosmore
[DBOB no.1367]" relationship="apprenticed to" remarks=""/>
</Dbob-firm>
```

Appendix B – The XML format for records in the British Organ Archive Index (BOA)

The record shown below is for the Village of Harlton. The record includes one primary reference, four secondary references and three illustrations from the Andrew Freeman collection.

```
<Boa-record boa-ref="6037" building="Assumption of the BVM" building_index="35472" country="UK"
county="Cambs" denomination="Ang" place_index="" remarks="" town="HARLTON" >
  <Boa-primary builder="Bishop" date="1868c" document="Misc" job="1146" page=""
remarks="Opus List; extant records held by Bishop & Son; 'Rev'd Fisher, Harlton"
volume="01" />
  <Boa-secondary author="Edmonds, B.B." job="" page="010" remarks="Bishop & Starr
n.d.; 1m" title="Edmonds Spec notebooks -series 2" volume="010" volume_number="" />
  <Boa-secondary author="Haycraft, Frank W." job="" page="017" remarks="Bishop & Starr
n.d." title="Haycraft n.b." volume="" volume_number="" />
  <Boa-secondary author="" job="" page="140" remarks="" title="Organ" volume="018"
volume_number="071" />
  <Boa-secondary author="Taylor, George B." job="" page="215" remarks="Bishop & Starr
n.d.: 1m/p" title="Taylor notebooks" volume="01.1" volume_number="" />
  <Boa-illustr author="Freeman, Andrew" date="" plate_number="" remarks="Quarter-plate Album
&#914; .107" title="AF Plates" />
  <Boa-illustr author="Freeman, Andrew" date="" plate_number="" remarks="Quarter-plate Album
&#914; .107" title="AF Plates" />
  <Boa-illustr author="Freeman, Andrew" date="1935" plate_number="" remarks="Album 03.283
&#914; 282" title="AF Plates" />
</Boa-record>
```