



# THE AUSTRALIAN NEWSPAPERS DIGITISATION PROGRAM (NDP)



Rose Holley – Manager Newspaper Digitisation Program

Presentation at the Association of Parliamentary Libraries of Australasia Conference

26th July 2007, Australian Parliament, Canberra



# Current Status

- 29 November 2006 approval from Minister for Arts and Sports for National Newspaper Digitisation Program
- Budget approved -\$8 million for 3 million pages over 4 years
- 1<sup>st</sup> March 2007 – contract signed with OCR supplier
- 2<sup>nd</sup> April 2007 Manager for NDP starts and program enters initial phase



# Content and Coverage

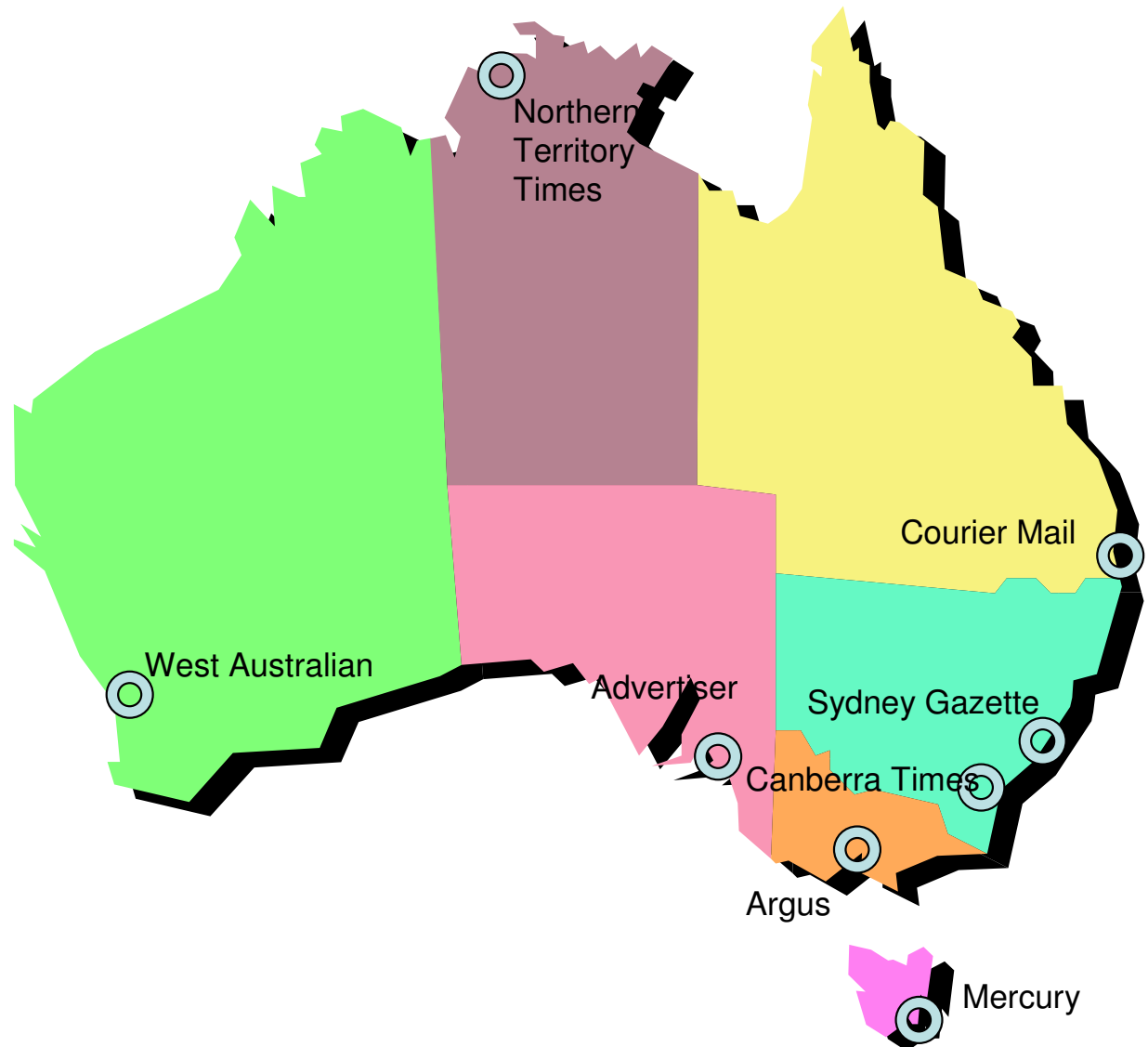
## National Content

Initially a title from each state

Focus on major titles from each state first

Anticipated that 'regional' titles may be contributed later

Coverage: published between 1803 – 1954 (out of copyright)





# Process in brief

National sourcing of selected newspaper microfilm masters.



Masters scanned by W & F Pascoe, Sydney to tiff files.



NLA perform quality assurance, add metadata.



Apex Publishing, India process tiff files - OCR, zoning, xml markup.



NLA QA files, ingest to system, create derivatives for delivery.



# Timeframe

April - September 2007

- ✓ Pilot data to Pascoe's and to APEX to design and test workflows, systems and software against agreed project spec.
- ✓ Developing software and infrastructure in-house to support workflows.



# Timeframe

October 2007 – 2008

- ❑ Development of search and delivery software
- ❑ Production phase 1 begins – 500,000 pages in first year
- ❑ Public launch of service
- ❑ Progressive addition of content



# Technology - internal

Old newspapers being processed and delivered using latest digital technology

- NLA developing in house:
  - Ingest and storage system
  - Workflow and content management system including quality assurance module
  - Search and delivery package
- NLA providing:
  - System Infrastructure  
(storage, backup, disaster recovery)





# Technology - external

- Scanning microfilm using newest scanner (Flexscan) and software (nextstar) from NextScan [www.nextscan.com](http://www.nextscan.com)







# Technology - external

Apex 'Izaac' software:

- Zoning areas and articles on a page
- Flag continuing articles across multiple pages
- Categorise articles on a page
- OCR text on a page
- Re-key headings and first 4 lines of text.
- Deliver xml files (alto) and METS files.



# The Maitland Mercury,

AND  
HUNTER RIVER GENERAL ADVERTISER.

VOL. II.

SATURDAY, JANUARY 20, 1844.

No. 55.

## JOB AND BOOK PRINTING.

AN extensive addition having been just made to the PLAIN and FANCY JOBBING TYPE at the

"MAITLAND MERCURY" GENERAL PRINTING OFFICE.

Parties requiring Posting or Hand Bills, Books, Pamphlets, Catalogues, Leases, Title Deeds, Circulars, Cards, Bill-heads, Cheques, plain or colored Labels, Baker's Bills, Impounding, Law and other Forms, &c. &c. can have them executed in a superior manner, with great despatch, and at reasonable prices.

Notice to Shippers of Wool at Newcastle.  
For London direct, to follow the "Cuba,"

THE fine brig "GANNET," A 1, 323 Tons, under engagement with the Australian Agricultural Company, will be ready to receive Wool on or about the 21st January, 1844, and will meet with immediate despatch, as she will have all her dead weight on board on arrival. For freight or passage apply to

F. EBSWORTH,  
A. A. Company's Agent, Bligh-street, or to  
J. B. METCALFE,  
Lower George-street, Sydney.

### Notice.

A GENERAL MEETING of the SHARE-HOLDERS in the HUNTER RIVER AUCTION COMPANY will be held at the Offices of Mr. John Turner, Solicitor, East Maitland, on THURSDAY, February 1st, 1844, at Noon, for the purpose of winding up the affairs of the said Company. 978

### To Printers.

JUST RECEIVED, ex *Hamlet*, and on sale by the undersigned—

News Double Crown PRINTING PAPER, 42 inches by 29, weight per ream 56 lb.  
News Double Crown ditto, 29 inches by 21, weight 28 lb.  
Double Crown, 20 lb.  
Double Crown, colored (yellow, lilac, and pale pink)  
Demy, 17 lb.  
Demy, 14 lb.  
Demy, coloured (yellow, green, light blue, pink, and lilac)  
Folio Post, middle yellow wove, 16 lb.  
Folio Post, thin yellow wove, 13 lb.  
Small (or common size) Cards  
Medium (or town size) Cards  
Third-size Cards

NO LET, NAPOLEON COTTAGE, James's-street, West Maitland, late in the occupation of Mr. D. Patterson. The cottage contains dining room, parlour, large hall, and two large bed rooms, with detached kitchen, servants' room, and laundry. A good yard, stable, and a never-failing well of pure water. Rent moderate. Enquire of Mr. J. Connor, Painter, High-street.  
January 12th, 1844. 39

### Anlaby's Stores, Morpeth.

JOHN ANLABY begs respectfully to inform parties requiring such accommodation, that he is desirous of Letting his Two large STONE STORES and WHARF adjoining the Morpeth Hotel, for the purpose of a SLAUGHTERING or BOILING-DOWN ESTABLISHMENT. The eligibility of the premises, to those acquainted with them, need not be dwelt upon. They will be found replete with every accommodation, and the terms will be moderate.

Wool, Grain, Tallow, and other produce, stored as usual.  
Morpeth Hotel, January 10, 1844. 32

### Soap and Candle Works, West Maitland.

WILLIAM SKINNER having succeeded to the business recently conducted by Mr. A. Dodds, as Soap and Candle Manufacturer, respectfully informs the inhabitants of Maitland and the Hunter district generally, that he is prepared to send out a superior article in either branch of his business, either for cash or by barter for tallow.

Soap and Candle Works, West Maitland, }  
opposite Reeves's, Albion Inn. } 35

### Muswellbrook Steam Mills.

GEORGE CHIVERS begs to intimate that he has Reduced his charges for Grinding and Dressing Wheat to 1s. per bushel. No Credit whatever will be given, but Wheat, Wool, or Sheepskins will be taken in payment of mill charges.  
6th December, 1844. 21

### Reduction in the Price of Grinding Wheat and Maize.

JOHN PORTUS begs most respectfully to acquaint the public that he has reduced his charge for grinding 25 per cent. for some months back, to those who have regularly paid their accounts.

His charge for Grinding and Dressing Wheat is now 9d. per bushel, and for Separating and Smutting 3d., in quantities not less than three bushels; for small lots a trifle more will be charged for extra trouble.  
Maize Cracked, 6d. per bushel; Twice Ground

### Classical and Mercantile Academy, Mayo's Buildings, East Maitland.

MR. JAMES S. WHITE, late Teacher of the Philosophical, Classical, and Mercantile department in the Australian College, Sydney, begs to intimate to the inhabitants of Maitland and its vicinity that he has opened the above Academy on Monday, the 8th of January, 1844. Having had ample opportunities, during a course of several years experience as a public teacher and private tutor, of observing the excellent effect of the ticket system, in securing close and unremitting attention to study during the whole course of the year, Mr. White purposes introducing it. In conducting the above establishment Mr. White pledges himself that the utmost attention shall be paid to the improvement and correct moral discipline of the pupils who may be entrusted to his care.

Most satisfactory references can be procured from the Rev. Mr. McIntyre, A.M., West Maitland, from his brethren of the Synod of Australia, and from several of the leading men of Sydney.

The course of instruction will embrace English Reading, Grammar, Geography, with use of the Globes, History, English Composition, Writing, Arithmetic, Book-keeping, Latin, Greek, Mathematics, French, and Drawing.  
Hours of teaching, from 9 a.m. to 12, and from 1 to 3 p.m.

TERMS PER QUARTER.	£	s.	d.
Reading and Spelling alone	0	15	0
Writing, Arithmetic, Book-keeping, Grammar, Geography, with the use of the globes, History, Composition	1	1	0
Above, including Latin and Greek	2	0	0
Above, including Mathematics	2	10	0
French	1	0	0
Drawing in Pencil, Chalk, Flower Painting, &c.	1	0	0

Mr. White will receive one or two Boarders, at the following charges per quarter:—For pupils under 12, £10; above, £12 10s.; including education.  
Fees payable in advance. 22

### Barley! Barley!

THE undersigned, taking into consideration the present scarcity of Cash, begs leave to intimate to those parties whose names have figured on the wrong side of his books for a length of time, that he will be willing to take good English or Cape Barley, Maize, Hay, or other Colonial Produce, in payment of his claims, at the full Market Price, delivered at his residence, Sportsman's Arms, West Maitland.

R. P. CUMMINS.  
Maitland, November 14, 1843. 7

### Affidavits for Proof of Debts in Insolvent Estates.

FORMS of AFFIDAVITS for PROOF of DEBTS in INSOLVENT ESTATES may be had at the Mercury Office, West Maitland.

### MAITLAND PRICE CURRENT.

	£	s.	d.
Ale and Porter, per hhd. . . . .	4	10	0
Taylor's, ditto . . . . .	5	0	0
Dunbar's, per dozen . . . . .	0	9	6
Ale, Hunter Brewery, per hogshead	4	0	0
Anatto, per lb . . . . .	0	6	0
Arrowroot, per lb . . . . .	0	1	0
Beer, Hunter Brewery, per hogshead	2	0	0
Bottled Fruits, per bottle . . . . .	0	2	0
Per dozen . . . . .	1	1	0
Bread, per loaf of 4 lbs. . . . .	6	0	7
Bricks, per 1000 . . . . .	0	18	0
Butcher's Meat: Beef, per lb . . . . .	0	0	1
Mutton, ditto . . . . .	0	0	1
Pork, ditto . . . . .	0	0	3
Veal, ditto . . . . .	0	0	3
Butter, fresh, per lb . . . . .	9	0	1
Calif Skins, each . . . . .	0	2	0
Candles, mould, per lb . . . . .	4	0	4
Dip, per lb . . . . .	3	0	4
Cheese, per lb . . . . .	5	0	6
Coal, per ton . . . . .	0	13	0
Coffee, per lb . . . . .	9	0	1
Currants, Zante, per lb . . . . .	6	0	8
Currie Powder, per bottle . . . . .	3	6	6
Eggs, per dozen . . . . .	6	0	9
Firewood, per load . . . . .	0	3	0
Flour: (Portus's Mills, for cash on delivery)			
First quality, per 100 lbs. . . . .	0	12	0
Second, ditto . . . . .	0	10	0
Ration, ditto . . . . .	0	9	0
Bran, ditto . . . . .	0	5	0
(Nicholson's Mills, cash on delivery)			
First quality, per 100 lbs. . . . .	0	11	0
Second, ditto . . . . .	0	9	0
Ration, ditto . . . . .	0	7	6
Bran, ditto . . . . .	0	4	6
Fruit: Oranges, per dozen . . . . .	6	0	1
Peaches, per dozen . . . . .	1	0	6
Grapes, per lb . . . . .	0	0	6
Apples, per dozen . . . . .	6	0	1
Pears, per dozen . . . . .	6	0	1
Figs, per dozen . . . . .	2	0	6
Melons, each . . . . .	2	0	6
Grain: Wheat, per bushel . . . . .	3	0	6
Maize, ditto . . . . .	1	6	6
Oats, Derwent, ditto . . . . .	0	0	0
Barley, ditto . . . . .	1	3	0
Hay, Lucerne, per ton . . . . .	2	10	0
Oaten, ditto . . . . .	2	15	0
Hides, green, each . . . . .	4	0	5

### HUNTER RIVER AGRICULTURAL SOCIETY.

A meeting of the committee of the Hunter River Agricultural Society was held at the Northumberland Hotel on Thursday last. About twelve members were present. Mr. Pilcher was called to the chair.

The Chairman opened the proceedings by reading the portion of the minutes of the general meeting on Thursday week which had reference to the duties of the committee.

The Rev. Mr. Stack stated that Mr. Wilson was unavoidably absent from the meeting to-day, but he had accepted the office of Secretary, and would enter upon its duties immediately.

The secretary was instructed to write to George Wyndham, Esq., to inform him that he had been appointed president of the society for the current year, and to request that he would hold the office. The Secretary was also desired to address letters to those members of the committee who were not present at the last general meeting, informing them of their appointment; and to the members of the society generally, stating that the society had commenced operations, and requesting them to pay their subscriptions as early as convenient.

A conversation ensued upon the necessity and importance of collecting the subscriptions as early as possible, in order that the committee might be enabled to carry out the instructions of the general meeting; and with a view to facilitate the collection of subscriptions the following resolution was adopted:—"That the following gentlemen be appointed to receive subscriptions—Mr. R. Green (treasurer), Mr. Coates Wilson (secretary), Mr. G. Yeomans, Mr. P. J. Cohen, Mr. Lipscomb, and Mr. Reynolds; and also the Bank of Australasia."

Several new members were then proposed and admitted.

The Rev. Mr. Stack said that since the general meeting he had been endeavouring to devise some plan by which the suggestion of Dr. Scott, relative to the verbal communications of practical agriculturists, might be carried into effect. He thought the suggestion a very important one, and if judiciously acted on might be the means of obtaining a large body of useful information. Some plan might be arranged, by which persons could attend the committee meetings, and after the formal business was disposed of they might enter upon the discussion of points of interest connected with agriculture, of which previous notice had been given. The Secretary could preserve loose notes of the more important portions of the conversations; and these notes might be revised and collated by a sub-committee appointed for that duty, with a view to their being recorded in a book to be kept for the purpose. He had no resolution to propose.





# Pilot categories (8)

## **News**

News and current affairs including law courts and crime, official appointments and notices (e.g., Gazettes), commerce and business news, sporting news, social news

## **Advertising**

Classified advertisements and notices, display advertising

## **Birth Death Marriage notices**

Births, deaths, marriages, anniversaries, etc. notices

## **Obituaries**

Obituaries



# Pilot categories

## **Editorial commentary and letters**

Editorials, leaders, letters and correspondence (usually to the editor - unpaid), editorial or political cartoons

## **Shipping News**

Shipping news or intelligence

## **Arts and leisure**

Art, literature, music, theatre, comics, shows, gardening, travel

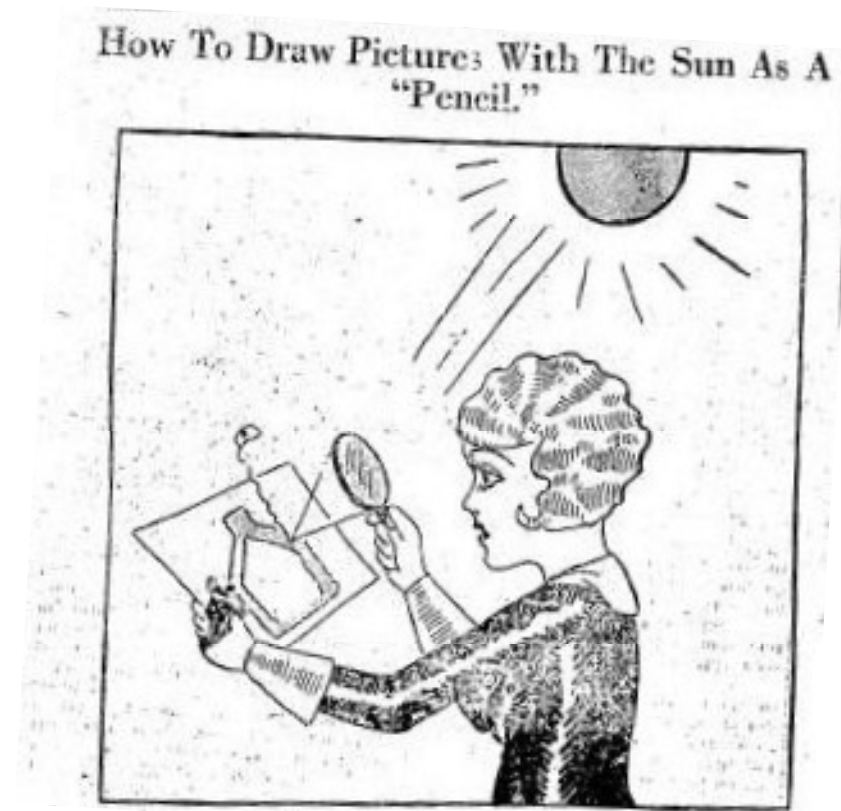
## **Detailed lists, results, guides**

Detailed sporting results, guides, radio and television guides, weather forecasts and results, election results, education results and courses, stock market lists, crossword puzzles.

# Illustrations

Categorised and have a metadata flag to mark the illustrations

- Photo
- Cartoon
- Map
- Graph
- Illustration



Canberra Times 26 July 1928 page 6



# Work in Progress this week...

- Derivative size and zoom technology testing
- Wireframes for search and delivery design
- In-house Quality assurance on images

Screenshots follow.....



# Testing derivative sizes and zooming

issn18339719-s3524

- [issn18339719-s3524](#)
- [issn18339719-s51650](#)
- [issn18340938-s1635](#)
- [Newspaper world](#)

## Lorem ipsum dolor sit amet

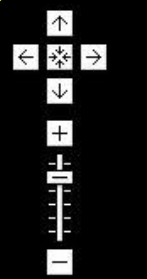
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec molestie tellus eu sem. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Etiam viverra sagittis felis. Etiam imperdiet, sem quis porta ullamcorper, metus neque mollis ligula, non posuere justo arcu ut dolor. Ut scelerisque purus a pede. Aenean aliquam nonummy dolor. Nullam fringilla, erat in adipiscing condimentum, nisi nulla sollicitudin nisi, eget condimentum enim elit quis diam. Maecenas vel risus. Ut ultrices, diam eget bibendum mattis, ipsum ante mollis libero, eu imperdiet nulla mi vel lorem. Cras in tortor. Nulla risus velit, porta non, egestas vel, tincidunt in, ligula. Cras sit amet nibh nec sapien viverra sagittis. Suspendisse cursus varius metus. Nulla facilisi. Sed scelerisque.

Cras ultricies. Maecenas semper est a turpis. Sed id mi a orci nonummy adipiscing. Sed ligula enim, dapibus gravida, condimentum at, porttitor nec, orci. Aliquam ligula. Proin non mauris nec nulla porta condimentum. Nullam nec leo. Phasellus sapien eros, aliquam vitae, convallis ac, vestibulum ac, eros. Nunc sit amet risus vitae odio consequat molestie. Phasellus aliquam est in tellus. Nam iaculis.

Donec a augue ac pede suscipit faucibus. Donec urna. Curabitur suscipit elementum neque. Vestibulum rhoncus eleifend diam. Sed posuere est eu purus. Morbi vulputate ante id ante. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Cras nec pede vel metus laoreet gravida. Nam auctor, felis ac egestas vestibulum, odio metus iaculis mi, nec vestibulum augue lorem at elit. Aenean orci. Nunc nec ipsum. Sed quis dui in augue hendrerit dapibus.







Google zoom technology

berry, Strawberry, Pine-  
apple, Lime Juice ..... 1/2 bot.  
Schweppes Lime Juice  
Cordial ..... 2/4 bot.  
Raspberry Syrup ..... 1/9 bot.  
Lemon Cordial ..... 1/9 bot.  
Colonial Ox Tongues, 1 1/2 lb. 3/9  
Fikoz Ox Tongue, 2lb. ... 5/3....  
Colonial Sheep Tongues, small 1/4  
large 1/10  
Chrystallised Cherries, 3oz.  
pkt. .... 3/6 lb.  
Sweet Sliced Chut-  
ney, small 1/3 1/2  
medium 1/11  
Small Sweet Sliced  
Chutney, small 1/-  
medium 1/6  
Currants, 3 crown, extra  
choice ..... 9d. lb.  
Foster Clarke's Custard Powder—  
4oz. pkt. .... 6d  
12oz. pkt. .... 1/2  
1 lb. tin ..... 1/9  
Pickled Onions, Oakleaf, .. 1/6 bot.  
Rosella Chutney ..... 1/3 bot.  
Roast Spring Chicken, whole  
bird in jelly ..... 3/-  
Rosella Fruit Salad, in bots. 1/6 bot.

Sunkist and Del Monte, 2lb. tins 4/6  
Arnott's best Fancy Biscuits,  
2lb. tins ..... 2/3 and 3/9  
Best Jordan Almonds .... 3d. oz.  
or 4/- lb.  
2oz. tins Ground Almonds, 1/5 tin.  
**BURNETT'S EXTRACT—**  
Lemon, Raspberry, Kola,  
Lime Juice, Pineapple .... 1/- bot.  
**CANDIED PEEL—**  
Lemon ..... 1/3 lb.  
Orange ..... 1/3 lb.  
Citron ..... 2/- lb.  
**CAKES AND PUDDINGS—**  
Arnott's Xmas Cake, 3lb. 3/10. ea.  
Ireland's Xmas Cakes, uniced 4/6 ea.  
Ireland's Xmas Cakes, iced  
on top ..... 5/3 ea.  
**SWALLOW & ARIEL'S PLUM  
PUDDINGS—**  
1/2 lb. tins ..... 1/- ea.  
1 lb. tins ..... 2/- ea.  
1 1/2 lb. tins ..... 3/- ea.  
2 lb. tins ..... 4/- ea.  
**TILLOCK & CO'S PLUM  
PUDDINGS—**  
1 lb. tins ..... 1/11 ea.

Customers requiring Cakes and Puddings are advised to  
Place their Orders early.  
Mail Orders are packed free—But are freight extra.

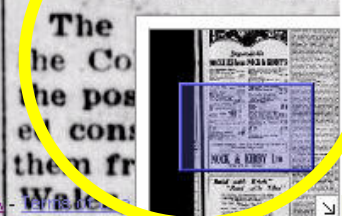
**NOCK & KIRBY LTD.**

“FOR YOUR NEEDS.”

100 - 104 GEORGE STREET SYDNEY

An interesting development of the Commonwealth of Australia was given by the Australian Constitution. When Australia became an independent legislative body, it was faced with the decision of whether to be a Dominion or a Colony. The British Council. The Bishop of Sydney had been appointed by the Crown. The Constitution, although in a Colony, so called, or in case of emergency, patent are made in the Act of Parliament, constituted and election conferred by the Crown. Yet the patent will not have effect or operation in the independent legislature. The Privy Council of the Church of England there is no such law, is in the same any other religious but in no worse position may adopt, any other community for enforcing discipline which will be who expressly or assented to them.

STATE CON





# Search and delivery wireframe

Newspapers logo		Search	Nav	Nav
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1

## Newspapers

search for:

advanced

search by location	search by paper
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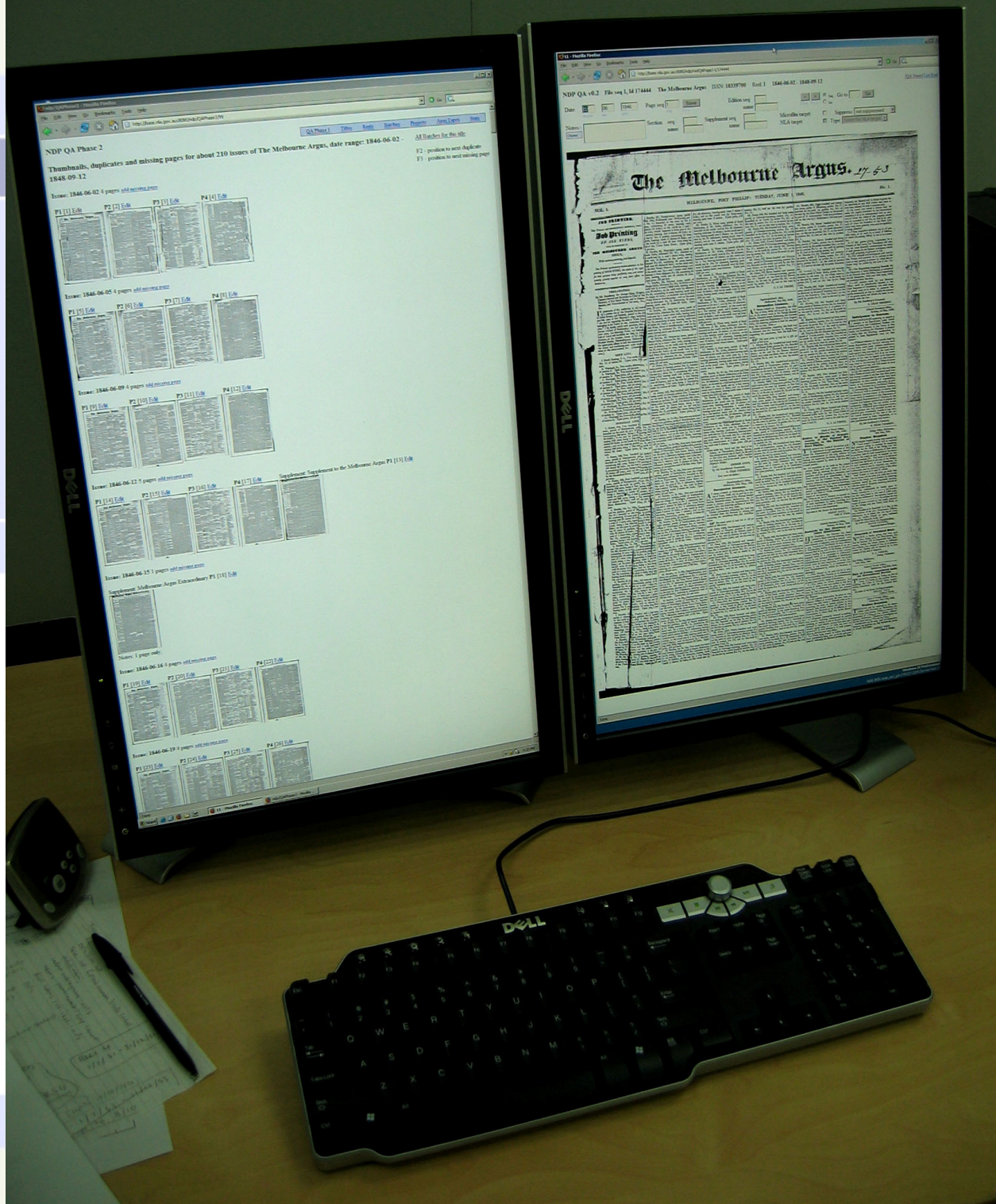
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec hendrerit fringilla nunc. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Aliquam posuere. Praesent a arcu. Cras nec risus vel nisi auctor fringilla. Maecenas ante lacus, blandit id, mattis sit amet, vulputate in, magna. Mauris erat. In gravida dapibus ligula. Donec fringilla tellus eget orci. Maecenas accumsan erat. Nullam sed est vitae elit elementum vestibulum. Integer ultrices tellus quis lorem. Etiam ultrices eros at turpis. Morbi viverra diam in mi. Fusce auctor, augue eu fermentum hendrerit, dolor dolor tempor metus, in nonummy nisi est in neque. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin luctus felis. Nulla vehicula, nibh sed volutpat imperdiet, urna turpis volutpat tortor, adipiscing tempor ligula ipsum non augue. Nullam est nulla, imperdiet consectetur, suscipit nec, accumsan ut, enim.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec hendrerit fringilla nunc. Pellentesque habitant morbi



# QA system In-house

Use 2 widescreen monitors placed vertically. Can view complete page within context of issue. Add metadata, sort out missing and duplicate pages within an issue. Prepare batches to send for OCR.





# Contributions

- NLA working with State Libraries as part of ANPLAN.
- Feedback from State Libraries and stakeholders on prototype search and delivery interface.
- Tell your users about the program and which titles from your state have been selected for initial phase.
- Contribution of local newspapers at later stage.



# Relationship - ANPLAN

Website: <http://www.nla.gov.au/anplan/>

NATIONAL LIBRARY OF AUSTRALIA

**Australian Newspaper Plan** | PRESERVING FOR PERMANENT ACCESS

Collect  
Preserve  
Access

Home | About | Heritage | Partners | Current Activities | News | Useful links

> [Home](#)

## The Australian Newspaper Plan



The Australian Newspaper Plan is an ambitious, ongoing project designed to collect and preserve every newspaper ever published in Australia, guaranteeing public access to these important historical records. There are similar plans for New Zealand's newspapers.

### Collect

Do you know the whereabouts of a [missing newspaper](#)?

### Preserve

The overall aim of the ANPlan project is to [preserve](#) all Australian newspapers and to give the public access to them.

### Access

ANPlan lets you [access](#) our newspaper heritage.

Partners

### What's new

[Australian Newspapers Digitisation Program](#)

### Snippets from the archive

Have a look at what was making news [100 years ago](#) and find out about the [history of Australian newspapers](#).

### Newspaper chronology

Find out what was happening in the world of newspapers from 1802 to 2005 by looking at the [Newspaper Chronology](#).





# Keeping Up to Date

- E-mail contact - [NDP@nla.gov.au](mailto:NDP@nla.gov.au)
- Website: <http://www.nla.gov.au/ndp/>



The screenshot shows the website for the Australian Newspapers Digitisation Program. The header features the program's name and a navigation menu with 'Home' and 'Contact Us'. The main content area is titled 'Australian Newspapers Digitisation Program' and includes a section 'About the program' with several paragraphs of text. A yellow box at the bottom highlights information about the library's software development. A sidebar on the right contains links for 'ANPLAN' and 'NLA Digital Collections'.

**Australian Newspapers Digitisation Program**

[Home](#) | [Contact Us](#)

[Home](#)

[ANPLAN](#)  
[NLA Digital Collections](#)

## Australian Newspapers Digitisation Program

### About the program

The National Library of Australia, in collaboration with each Australian state and territory library, has commenced a program to digitise out of copyright newspapers.

The aim is to build a service that will provide free online access from the first Australian newspaper published in 1803 through to 1954 newspapers. The digitisation program will vastly improve access for all Australians to one of the most valuable research resources on Australian history and culture. The cost of the initial 4 year phase, funded by the National Library is expected to be more than \$8 million. In the initial phase one major newspaper from each Australian state and territory will be digitised, amounting to 3.5 million pages of content.

State and territory libraries and other owners of quality master microfilm will provide microfilm versions of relevant newspapers for the digitisation process. The microfilm will be scanned and digital images created. These will then be converted into full text searchable files through the use of Optical Character Recognition (OCR) technology. The program supports the goals of the Australian National Plan for Australian Newspapers (ANPLAN), which is a co-operative initiative of the national, state and territory libraries to preserve and make accessible all newspapers ever published in Australia.

The National Library of Australia is developing software and infrastructure to support this mass digitisation program. The online search and delivery solution is being developed in-house and is based on already available software known as Lucene. This approach will allow the Library to integrate the newspapers service with its other search and delivery services.

