AUSTRALIAN NUMISMATIST

2004

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OF VICTORIA
Founded 1946
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Contents

Cover: *Medal issued for the inaugural celebrations of Sydney Harbour Bridge in 1932*

A HISTORY OF THE NUMISMATIC SOCIETY OF VICTORIA

By James Hunt Deacon, NAV 12[1]

[**Current Editor's Note**

2004 is the 90th anniversary of the foundation of the Numismatic Society of Victoria (NSV). When the Numismatic Association of Victoria (NAV) was founded in 1946, it was decided to make a fresh start, but it also incorporated the Numismatic Society of Victoria. This history of the NSV was written by James Hunt Deacon who was involved in the foundation of the Association of Australian Numismatists; he was also a foundation member of the NAV.]

[**1969 Editor's Note[2]**

The Numismatic Association of Victoria was founded in 1946. Prior to this time we did have a Federal body known as "The Association of Australian Numismatists" but there had not been a State body since 1931.

The late James Hunt Deacon, Numismatologist at the South Australian Gallery, prepared the following article in 1961 with the thought that it could be used at some time in the future to acquaint newer members of our hobby with past history and remind older members of things long past and perhaps forgotten.]

When moves were first made in 1944 to secure the independence of The Numismatic Society of Victoria, I wrote a brief 'history' of the Society up to that time; but the story was incomplete in many ways. Much of my data has been drawn from published reports, the Minute Books, and correspondence with members and past members. This is an attempt to tell the story from the start to 1946.

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[1]   Reprinted from *Australian Numismatist*, Vol 23, No 3, April 1969
[2]   Ed Philpotts, NAV 217

EARLY DAYS :

Very little is known of the activities of the collectors prior to the foundation, and it is thought that many 'plodded' along the numismatic road unaware that others were also travelling along the same route. Alfred Chitty, M.B.N.S. was well known both in Australia and overseas as a writer on Australian and New Zealand numismatics. Dr Yelland was a contributor to the "Numismatic Circular" and Francis Gardner had published articles in a trade magazine.

FOUNDATION, 1914 :

No doubt inspired by the successful move in New South Wales in the preceding year, two or three collectors discussed the possibilities of Victoria having its own Numismatic Society. Messrs Francis Gardner and S. E. Whellams were the prime movers, and were supported by Dr Andrews, and Messrs E. S. Anthoney and F. W. Spry. On February 16th a meeting was held and the decision to form such a society was made. Provisional officers were appointed, rules adopted, and the first meeting of the Society was held on the 24th of the same month.

FOUNDATION MEMBERS

On March 24th, the foundation roll was closed with the following eighteen members :

Dr A. Andrews; Messrs E. S. Anthoney; W. J. Amor; W. A. Hall; J. Hammerton; W. Howatt; A. M. Isaacson; H. James; A. M. Le Souef (of the Melbourne Branch of the Royal Mint); J. W. Wills[3]; D. Raymond; F. W. Spry; S. E. Whellams; and Mrs Kenyon.[4]

The first council consisted of President, Dr A. Andrews; Vice-Presidents, Messrs Gardner and Hall; Treasurer and Secretary, Mr Whellams; and Councillors, Messrs Anthoney, Amor and James. Of the foundation members, Dr Andrews and Mr Raymond were also foundation members of The Australian Numismatic Society in Sydney.

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[3] The NSV minutes of 24 February 1914 records the election of Mr J Mills.

[4] This list only contains 14 names; one obvious one that is missing is Mr F Gardner. The NSV minutes for the meeting on 24 March 1914 state "Resolved that the 18 members now elected be declared original members." Further checking of surviving NSV records will be necessary to determine the other three.

FIRST PERIOD, 1914-1922 :

During this period, despite the War, the Society increased numerically and in influence. Monthly meetings were held, papers read, and exhibitions made. Excellent reports were issued to members and through them the Society became more widely known. It possessed its own library and cabinet of coins and interest was taken in the collections exhibited at the museum and at the Royal Mint.

SECOND PERIOD, 1922-1928 :

In 1922 the first attempt was made for the Society to enter the production and commercial side of numismatics. Although the move was defeated it had its repercussions and several members severed their connection with the Society. However by 1924 the Society had completed ten years of work and published its Decennial Report. From this time the Society continued to do good work but with a smaller membership.

THE DECLINE, 1928-1931 :

Two forces were responsible for the decline - these were domestic and international. We all remember the world wide depression about this time for it affected all sides of social life. However, this was not the main cause of what happened. Disagreements over matters of policy and management, disunity, and an instability of management, brought forth protests and resignations. No attempt appears to have been made to straighten out the difficulties and it was left to a few members to keep things going.

There was an attempt made to entice old members back but only with moderate success. The dreaded enemy to a learned society, commercialism, reared its ugly head again. Membership dropped and from 1929 the records are unreliable; property seems to have been unsatisfactorily guarded and by July 1931, five members remained.

THE AFFILIATION, 1931 :

The course taken was that of affiliation with the Historical Society of Victoria. Four of the five remaining members were already members of the latter body so little opposition to the move could have been expected. Despite the fact that the terms of the amalgamation, gave the Numismatic

Society the right to its name, own officers, and arrangement of special meetings, the absence of leaders and the loss of initiative and incentive resulted in a failure to achieve any results and to preserve that which the foundation members had built up.

DURING THE AFFILIATION, 1931-1944:

Strangely enough it was from without Victoria, rather than from within, that the main work of keeping the numismatic flag flying was made. Among several members and ex-members of the Society there was expressed determination that one day the Society would arise 'from its own ashes'.

In 1938 the writer approached numismatists with regard to the foundation of The Association of Australian Numismatists and many collectors in Victoria were contacted. It was soon seen that many difficulties to the re-opening of numismatic work in Victoria had to be seriously considered, but nevertheless, some plans were made. It was clear that before anything could be done concerning the Society its disaffiliation would have to be effected.

DISAFFILIATION, 1944 :

It was here that The Association of Australian Numismatists played its part in Victorian affairs. Discussions were commenced in January of 1944 and promises of support were secured if independence could be obtained. A request (dated Feb. 16th - 30th Anniversary of the Preliminary Meeting) which had the approval of the President and the two Victorian representatives on the Executive Council, was forwarded by the Association to the Council of the Historical Society for disaffiliation on the understanding that the Association would assume control until re-opening could be effected. The request was granted on March 24th (the 30th Anniversary of the closing of the Foundation Roll), and a Provisional Committee was appointed. This consisted of President (R. W. Farman) Secretary (A. R. Turnbull) Councillor (R. Marcollo) and the writer (ex-officio). Later Mr Turnbull resigned and was asked to hand over to Mr F. H. Schafer. Feeling that perhaps the Federal Control might hamper any movement towards re-opening, the writer (as General Secretary) placed the control into the hands of the President, and resigned from the Committee. One month later Mr Farman issued a Circular and ultimately

the work bore fruit in the establishment of the Numismatic Association of Victoria.

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I close the History with the following comments :

Looking back towards 1914 and taking a long ranged retrospective view of The Numismatic Society of Victoria, one comes to the conclusion that it justified its existence in every way. Its output of numismatic knowledge by means of papers, talks and exhibitions far out-weighed unfortunate domestic troubles in its later years. One fears that the worst is often told and the best left unsaid, and I feel that it has been this way with the Numismatic Society of Victoria. I feel that there is something in the name of The Numismatic Society of Victoria for to me, who has followed its course for many years, it conjures up memories of men like Dr Andrews, Messrs Anthoney, Fisher, Gardner, Hall, Howatt, Kellam, Mills, Schafer, Spry, and Whellams, and Mrs Anderson (nee Graydon), numismatists who have done much towards the encouragement of numismatic study in Victoria and Australia.

PROCLAMATION COINAGE OF AUSTRALIA WHAT IS IT?

By Ross Wilkinson, NAV 1120[1]
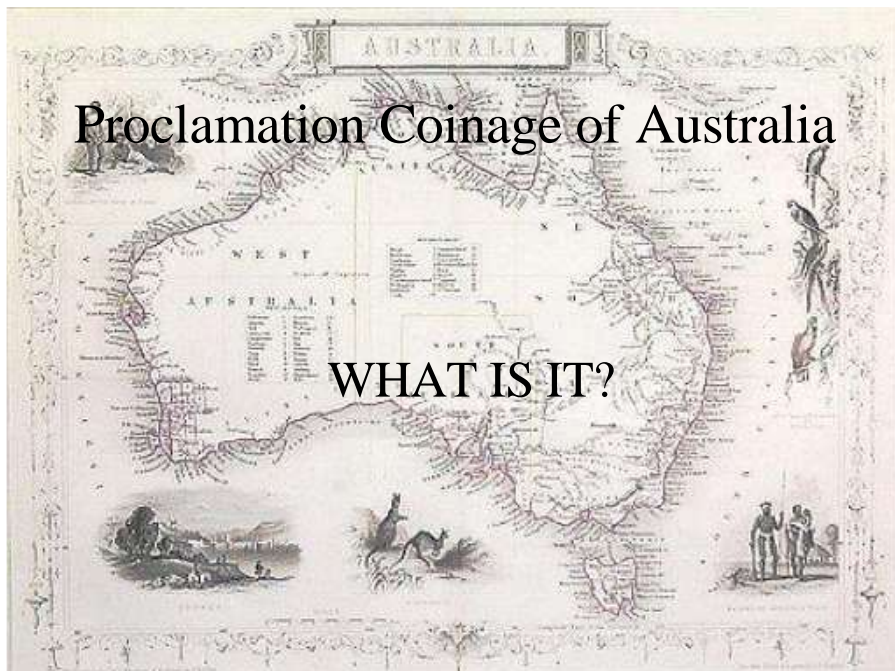
INTRODUCTION

What is Proclamation Currency?

This is probably one of the most debated subjects in Australian numismatics and nearly everyone has a view.

My interest in coinage and currency arose out of their link to historical events. So therefore, I am, I suppose, firstly an historian with an interest in numismatics. This is what makes the Proclamation Coinage so interesting

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[1]   Ross presented this paper to the NAV meeting No 885 on 21 March 2003

because it is our history; we learnt it in school. Who hasn't heard of the Rum Rebellion?

I am going to outline the trading and currency situation in the early colony and why the need for Governor King to take the action he did. I will provide a description of the Proclamation and coinage defined by King and, by looking at the terminology used by him in the document, attempt to determine what was "Proclamation Coinage."

THE BACKGROUND

In the period following Captain Cook's "discovery" of Australia, there was significant debate in government circles over the development of colonies to maintain adequate supply of materials such as flax and good timber for masts.

Whilst this was going on, Britain was engaged in a war with secessionists in North America and other European countries. These nations were also undertaking extensive sea exploration throughout the Pacific and Indian Oceans.

The British penal system was harsh and overcrowded with all manner of convicted persons. To overcome the overcrowding, the Crown had implemented a system of transportation to offshore colonies for fixed periods or "life" for serious offenders. Such felons were sent to these colonies at the rate of about 1000 each year.

The principal penal colony was North America until the War of Independence commenced. This put a hold on the transportation of felons who were then held on prison hulks moored on the Thames River until the outcome of the war was known. When this was suddenly lost, the Crown had to find a new location of sufficient size and suitability to accommodate the build up of felons sentenced to transportation.

The British Crown determined to establish New South Wales primarily as a penal colony but was also aware of its potential to supply flax, timber and whale oil. It is also extremely likely that, politically, the Crown was aware of its rivals' movements in the area and determined for political and strategic reasons to create a reasonably sized and secure presence through the development of a colony.

So it came to be that on 22 January 1787, King George III announced to the British Parliament that a penal colony would be established at Botany Bay

and on 13 May that year, the First Fleet, comprising 11 vessels, set sail under the command of Capt Arthur Phillip, RN, the first Governor.
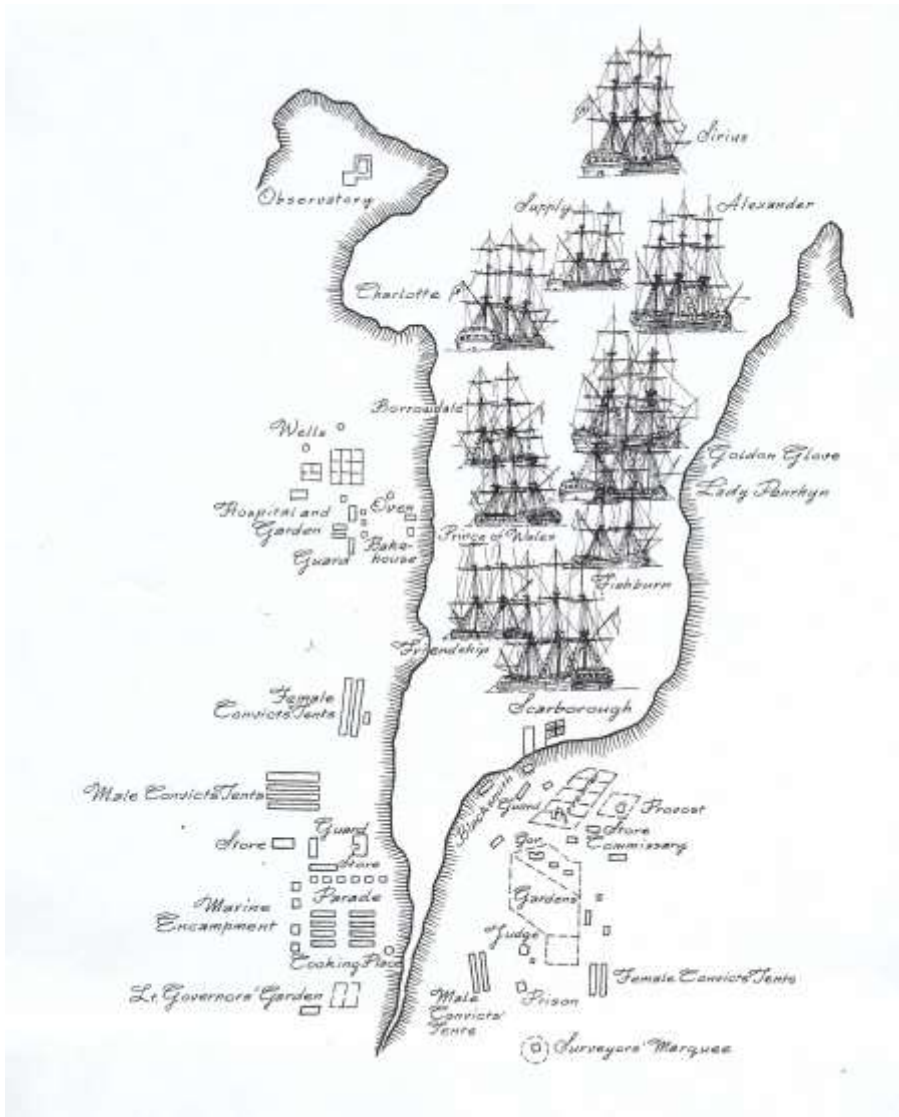

Figure 1- First Fleet in Sydney Cove, Port Jackson

As we now all well know, the fleet initially arrived at Botany Bay on 18 to 20 January 1788. Phillip found Botany Bay to be very disappointing and

possibly incapable of supporting the establishment of a fledgling penal colony. He upped anchor and sailed to a new location to the north, Port Jackson, and he landed and raised the flag on 26 January 1788.

THE COLONIAL ECONOMY

The British colonies used for transportation were managed through the Office of the Colonial Secretary in London. The cost of each colony's operations was met through a variety of sources. An initial cash grant was made to the first governor in each case. The civil servants attached to the colony were paid by advances into their London bank accounts and the military personnel were similarly paid from the respective Army and Navy purses.

The British Government also provided an annual cash advance for the "non-salary" components of each colony's operations. In a peculiar system of trust, this was paid in advance to a Colonial Agent based in London. The money was paid into each agent's personal bank account. The governors of each colony and other authorised officers were permitted to pay for goods and services by signing "treasury notes" and the recipients would forward these to the colonial agent for exchange into cash.

The Colonial Agent was paid a cash salary as well as having control of the colonial fund and could use it to invest for personal gain. The Colonial Agent during the early years of the colony from 1788 to 1812 was William Bassett Chinnery. His accounting was generally poor and he spent much of the purse on an extravagant lifestyle, investment loans that were defaulted on and other personal investments. From 1805 onwards he was pursued by the English Treasury for an accounting of his several bank accounts and audits were finally conducted. It was estimated that he owed the government in the vicinity of £80 000. He fled to Stockholm and his various holdings were sold to settle the debt. The various sales and calls upon sureties realised only about £20 000.[2]

During the early years the annual allocation to New South Wales was £1400 but by the time King came into office, this had risen to approximately £5500 pa. This was because that, for a number of factors including distance, a slowness to develop subsistence and export produce

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[2]   Scorgie, M E, Wilkinson, D and Rowe, J.

and a higher annual cost to maintain the convicts, the colony was unable to become any where near self sufficient.

Phillip was given a cash allocation of £400 in English and Dutch coinage. As the convoy had to take on supplies and undertake repairs in the Dutch colony at the Cape of Good Hope, it was unlikely that the Dutch governor would accept British treasury notes signed by Phillip or British currency as Britain was at war with the Dutch. Whilst hostilities were in progress, ships of one nation could harbour in opposing nations for short periods so long as their intention was not war related, ie, colonisation of Australia.

Also, early in the life of the colony, a severe shortage of food and livestock required a voyage to the Dutch East Indies to purchase much needed supplies and a vessel to bring them back to Sydney Cove. Obviously, even though political relationships were tender between the Dutch and the British, trade was trade!

A further amount of 4500 Spanish dollars was received in the colony but by the time King was appointed Governor, these had all but disappeared. Because of this shortage of tradeable coinage of whatever origin and denomination, trade and commerce continued using other commodities to which a currency value was attached. These values varied depending on the time and who was conducting the transaction. The most famous being the construction of the Colony Hospital or "Rum Hospital" as it was commonly known.

Apart from the official Treasury Notes, private promissory notes began to circulate but these were only as good as the financial standing of the person issuing. Trade and commerce was essential as, by 30 June 1801, there were 5547 persons resident in the colony.

THE PROCLAMATION

King recognised that retention of coinage was essential for the ongoing survival and development of the colony. So shortly after his appointment and following the arrival of 132 000 Birmingham or "cartwheel" pennies on *HMS Porpoise*, on 19 November 1800, King produced the famous Proclamation.

I believe this to be one of the most significant numismatic events in Australian history, rivalling Macquarie's Holey Dollar and Dump,

PROCLAMATION COINAGE OF AUSTRALIA - WHAT IS IT?

Australian gold coinage, minting of the 1910/1911 Australian pre-decimal coinage and the introduction of decimal currency in 1966.

Not only did the Proclamation define what was to be the coinage accepted in the colony, it declared a value for that coinage and defined the first "legal tender" for Australia.

King's reason was to put a premium on the face value of this coinage in an attempt to make it attractive for retention and circulation within the colony. Supposedly by putting a premium on the coinage, visiting sea captains would not take the coin away with them.

The coins listed by King in the Proclamation are well known but are listed here to initiate the discussion:

Table of Specie

	s d
A Guinea	£1 „ 2 „ –
A Johanna	4 „ – „ –
½ Do	2 „ – „ –
A Ducat	– „ 9 „ 6
A Gold Mohur	1 „ 17 „ 6
A Pagoda	– „ 8 „ –
A Spanish Dollar	– „ 5 „ –
A Rupee	– „ 2 „ 6
A Dutch Guilder	– „ 2 „ –
An English Shilling	– „ 1 „ 1
A Copper Coin of one ounce	– „ – „ 2

This list has been extracted from the copy of King's Proclamation held by the State Library, Victoria. (figure 2).

There is information in various contemporary numismatic publications adding the British half penny and farthing to the list, alleging that these were received in bulk the day after the publication of the Proclamation on the arrival of *HMS Royal Admiral*. I can find no concrete information on this to date through my research with the State Libraries of NSW and

Victoria, nor through the Public Records Office. This lack of information is confirmed in various publications including Andrews and my correspondence with various people.
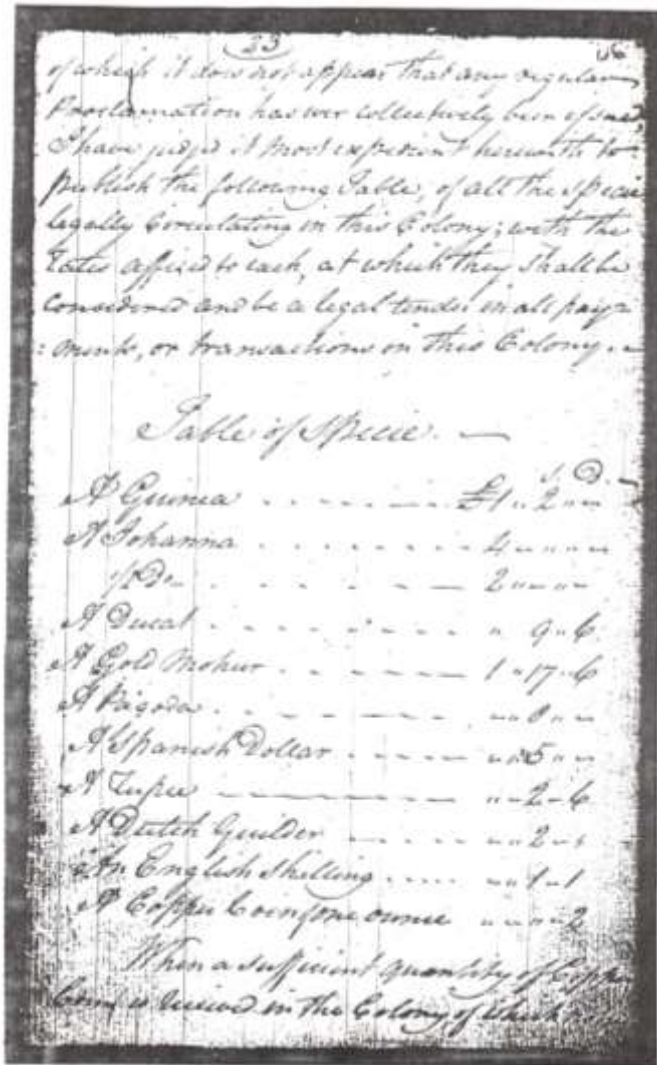

Figure 2 – Proclamation (part showing Table of Specie)[3]

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[3]   King, P G, Gov, *Proclamation 1800*, Copy from State Library, Victoria

King allegedly hand annotated the Proclamation on 20 November 1800 to hurriedly add these to the list but no copy of the hand annotation can be found to date. I am not entirely ruling this out as shipping records confirm the arrival of the Royal Admiral about this time. Unfortunately, the only cargo list located in my research mentions 300 prisoners but nothing else. The only hand annotation located was two years later when the Proclamation was first printed in the original Sydney Gazette, the forerunner to the Government Gazette. The annotations are believed to be those of the printer. No official confirmation is presently available to me and I am relying on correspondence with the State Library of NSW for this information.

WHAT IS THE TRUE PROCLAMATION?

I have three copies of the "proclamation" and each is different. Each is handwritten and contains essentially the same data. Each is in slightly different handwriting with one being significantly different.

I have a printed version down loaded from an internet site that is different with reference to the *Royal Admiral* and containing in the table of specie the two lower denomination English copper coins but no Pagoda! I have a further version reproduced in the magazine "Australasian Coin and Banknote" with reference to the *Royal Admiral* but no reference to the two extra copper coins.

So which is correct? I obtained the hand written copies from reliable government sources so am inclined to believe that at least one of these is a hand written copy of the original.

Correspondence with Brian Ahearn, former editor of ACB and author of a comprehensive article on proclamation coins, indicates that he is unsure of any amendment by King subsequent to the arrival of the Royal Admiral.

What is undeniable, though, is that coins other than those listed in the original Table of Specie, circulated in the colony including the halfpenny and farthing.

SO WHAT ARE "PROCLAMATION" COINS?

So what were King's intentions and how did he decide on what to include in his Proclamation? Did he just put his hand in his pocket and pull out

what was there, or did he go down to the Treasury and check what was in the cash box? Whilst I presume the latter occurred, we will probably never know.

We can recognise the logic behind the coins selected and listed given either their accepted status in world trading or proximity to trade with the colony.

So what did King really mean and what did he intend? I believe the clue lies in the wording of the third paragraph of the Proclamation and the clause,

> *"……….. I have judged it most expedient herewith to publish the following table of **all the specie** legally circulating in this colony with the rate affixed to each at which they shall be considered and be legal tender in all payments or transactions in this colony."* [4]

Did this mean only those listed or did it include any and all other coins to which a value could be attributed? Was it specific to those coins alone or did it refer to those coins of the various countries that were subsets of those nominated?

The Oxford Dictionary defines "specie" as "coin as opposed to paper money". It further defines "all" as "the whole amount, quantity or extent of".

I believe it is reasonable to assume that King meant **all the coin** legally circulating in the colony; otherwise, why did he have to amend the Proclamation to admit the later shipment of half pennies and farthings, *if this allegation is correct?*

"**Specie**" is self explanatory and the word "**all**" is an exclusive word, so therefore I think it is fairly clear.

Greg McDonald once wrote that if we were not to assume that King's intention was to include and value subsets of the nominated coins, then we would believe that the only legal tender in Australia today is the dollar only, not cents. This is a spurious argument at best because there is a Government currency order creating cents as distinct from the Proclamation which makes no such order for any subsets. It is specific – "***all the specie legally circulating in this colony***."

So where does this leave us? The major Australian authorities are divided in print. Greg McDonald started off in his early publications including the halfpenny and farthing but with the notation that these were not included in

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[4]   King, *ibid*

the original Proclamation. His early pocket guides did not include reference to Proclamation Coins but later editions did with a footnote referencing subset coins with values drawn from the Proclamation coins. Rennicks has also lately removed these two coins from its list of Proclamation coins but has a following statement that the purpose of the Proclamation was to provide a value base for the subset coins using half and quarter guineas as examples.

Dr Andrews in his text, *Australasian Tokens and Coins*, mentions the probable value of the circulating halfpenny and farthing at double face value consistent with the Proclamation. He does, however, state that the Proclamation is silent on these.

If King's intention was to create the Proclamation as a source document upon which values for subsets could be established, why did he list both the Johanna and half Johanna when the subset value is obvious?

So, we know that as well as the "proclaimed" penny circulating for twopence, the Cartwheel twopence and the halfpenny and farthing also circulated. It is most probable that other coins circulated and "cut" pieces of the Spanish dollar also circulated. As a value could be ascribed to them it was not unreasonable therefore, for traders to accept them and in turn pass them on to visiting ships.

The Spanish Dollar circulated prior to King's appointment as Governor and was subject to the practice of "cutting," that is, cutting the coin into quarters or other sizes. The person initiating the action would shave the cut edges by narrowing the cut as indicated in Figure 3. This provided the "profit" for the coin trader.

What we are aware of is that his intention to retain the coins within the colony did not work. Visiting ships' captains and traders merely put their prices up and took the coins offshore. Also visitors brought "non-proclamation" coins in and expected to trade them. The local coin-starved traders were only too happy to oblige and probably used King's proclamation values to arrive at a rate of exchange.

This occurs today as who amongst us has not put a circulating New Zealand or Fiji decimal coin received in change back into circulation rather than be short-changed. The agreed value of exchange is the value of the coin it most resembles. In my collection, I have a random selection of such coins found by me in my change in recent months. These include coins from New Zealand, Fiji, Singapore, Great Britain and so on. Anything that

remotely resembles an Australian coin in size and colour is passed to shopkeepers or vending machines.

There was an early practice of cutting Spanish Dollars to make "fractions" or "change" for transactions. This was done as follows and allowed for the trader to make a profit on the left over silver.
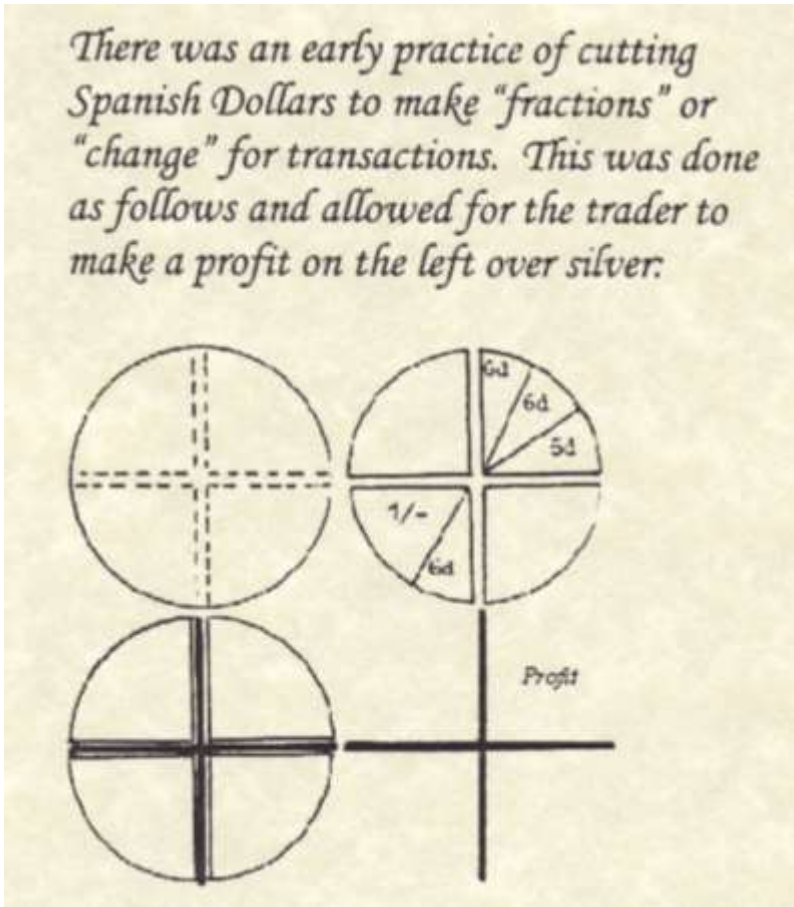
Figure 3 – Cut Coins[5]

So therefore, what is the issue that we are likely confronted with in this? Could it be that the real winner is the dealer who is to benefit by a premium on coins that can be described as "Proclamation" when in fact they're not? Or, is there a general misunderstanding as to what King really meant?

In my own experience, a coin advertised in Australia as "Proclamation" will fetch a higher price than a similar coin purchased or sold overseas.

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[5]   Austin

Obviously in Australia the word "Proclamation" has significant meaning to numismatists and is a key advertising word in numismatic deals. Should we criticise dealers for taking advantage of this? Perhaps not if it continues to stir interest in numismatics and fosters debate in forums such as this.

However, if people are loosely using this for their own gain only, then they are doing numismatics a disservice and may end up driving people away from collecting and studying this interesting and important chapter of Australian numismatic history.

MY PROCLAMATION COLLECTION

Unfortunately, I do not have every coin from King's Table of Specie, missing two gold coins, the Johanna, and the gold mohur. Of interest is what appears to be a 1791/2 overdate Dutch Guilder. Whilst the cob of 8 reales, is not listed, it was included in the colloquial term "Spanish Dollar" and probably circulated at the same value.

Figure 4 – Proclamation coins: Dutch Guilder and Ducat

Figure 5 – Proclamation coins: Portugal Half Johanna

Figure 6 Proclamation coins: Star Pagoda and silver Rupee

As we well know, the majority of Spanish dollars were minted in a variety of mints in the Americas, but the two main types are the "bust" dollar and the "Pillar" dollar. The Bust dollar illustrated in Figure 7 has extensive "chop" marks indicating much handling by Chinese merchants and traders.

Figure 7 – Proclamation coins: Spanish Dollar with chop marks

The English Guinea is not specifically identified but the most common "Proclamation" type accepted is the "Spade" guinea, noted by its spade-like crest on the reverse. McDonald states that there were, in fact, four different types of guineas circulating in England and any of them would be acceptable examples.

Figure 8 – Proclamation coins: Spade Guinea and shilling

Figure 9 – Proclamation coins: cartwheel penny

Non-Proclamation English coins are the cartwheel twopence coin, the halfpenny, the farthing, sixpence and threepence. Other non-English coins that may have circulated are the Spanish 2 reales (¼ Dollar). It is likely that many more circulated with traders setting an agreed value in the absence of any connection to coins in the Proclamation.

Figure 10 – non Proclamation: Twopence, sixpence, threepence, halfpenny and farthing

I have a number of commemorative issues. The oldest are tokens of various sorts being replica spade guineas. One is a Stokes and Martin advertising

token, another has a message and the third is a straight copy but with an odd date and obverse sequence: George III and the date 1701. I have heard of these being described as gambling tokens.

The modern commemoratives have been produced as follows:

- 1996 Perth Mint Kookaburra with the gold ducat, spade guinea, star pagoda and the Johanna privies.
- 2000 Royal Australian Mint silver Cartwheel Penny Proclamation commemorative
- 2000 Australasian Coin & Banknote Cartwheel Penny three piece medal set

Figure 11 – gambling tokens

SUMMARY

Governor Phillip Gidley King's actions in proclaiming legal currency, legal tender and establishing foreign exchange rates should be given their rightful place at the head of Australia's numismatic history.

His declaration, whether right or wrong, was clear and unambiguous. His document has, in my pinion, been used and abused and has opened a debate that may never be resolved.

I have my opinion and have placed an interpretation on it based on sound reasoning and legal training. I believe the document to be clear in intention and expression. I am not denying that other coin circulated nor criticising others for their views on what constitutes "Proclamation Coinage" but merely attempting to stimulate some discussion and, perhaps, ongoing debate.

ACKNOWLEDGEMENTS

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BRIDGES, ESPECIALLY THE FORTH RAIL BRIDGE

By Peter Wall, NAV 323

All the great bridges of the world which carry heavy traffic are, as a rule, of three types – the spans supported either by compression arches (in the cantilever or single arch type), or by tension arches (in the suspension type where the arch, upside down, is formed by the main suspension cables), and the third is the familiar girder type.

FORTH RAIL BRIDGE

One impressive bridge, though there are longer ones with longer spans, is the Forth Railway Bridge in Scotland. It is certainly the greatest, and one of the earliest, bridges constructed on this principle. In this kind of bridge, the arches are built out from the central towers on the piers.

Figure 1 – Forth (Railway) Bridge on National Commercial Bank of Scotland 1 pound note, 1959 (shown at 60%)

The two central spans of the Forth Bridge, completed in 1889, are each 521 m in length. There are six cantilevers of 207 m, including the two at the shore ends, and two central girders (between the cantilevers of the two long spans) of 107 m each. The height of the towers above the water is 110 m. The shore cantilevers are loaded to balance half the weight of the central girders, together with the rolling load of the trains that cross the bridge. On the structure of the bridge itself, 38 000 tons of steel were used.

It carries two lines of railway and the headway under the central is 48 m. The Forth Railway Bridge is shown on the 1 pound and 5 pound notes of the National Commercial Bank of Scotland and also on the 2004 United Kingdom 1 pound coin (the first in a series of four, each representing a constituent part of the United Kingdom).

Figure 2 - Forth (Railway) Bridge on United Kingdom 1 pound coin, 2004 (shown at 150%)

SUSPENSION BRIDGES

Of all of the suspension bridges, that of Brooklyn, New York is perhaps the most famous, closely followed by the Golden Gate Bridge of San Francisco with its enormous span of 1280 m. Another is the Forth Road Bridge in Scotland which is shown on the 1 pound note of the Royal Bank of Scotland.

Figure 3 – Forth Road Bridge on Royal Bank of Scotland 1 pound note, 1969 (shown at 60%)

In suspension bridges the arch is formed by lines of cable to which the roadway is hung. The roadway itself forms a compression arch of very low curvature and thus strengthens the structure.

SINGLE-ARCH BRIDGES

During the period between the two world wars, a variation of the single-arch bridge was developed. This is of interest to us in Australia since the method was used in the construction of the Sydney Harbour Bridge. It was on a smaller scale that a bridge of this kind was built over the Manchester ship canal and which ultimately formed the pattern of our own great bridge which was opened in 1932.

Formerly, single span arch bridges were built with the roadway running along the top of the arch, in the manner of the Niagara Bridge (span 256 m). The Sydney Harbour Bridge, owing to the difficulty of finding a safe foundation for the piers and the depth of the Harbour itself in the centre, had to be built with only the one span. When the half arches were complete, the two ends were joined and locked together at the highest point of the arch (122 m) and the roadway was constructed below and suspended by hangers from the great arch at a height of nearly 61 m (200 feet) above the water. Its stability under the heaviest loads is far greater than any suspension bridge. Its single span is 503 m long.

A replica of Australia's famed "Coat Hanger", located over the Save River in Zimbabwe, but having a span of only 379 m is the Birchenough Bridge. It was designed by Ralph Freeman (who was the structural engineer for the Sydney Harbour Bridge) and was completed in 1935; it is depicted on Zimbabwe's 20 cent coin.

Figure 4 – Birchenough Bridge on Zimbabwe 20 cent coin, 1997 (shown at 150%)

SYDNEY HARBOUR BRIDGE

By Ron Stewart, NAV 305[1]

The opening of this Bridge was the culmination of nearly 150 years of dreaming, planning and bridge designing.

Up to this time, Sydney had only been known for her convicts, the Holey Dollar and Tom Hanley, and now at last was to be placed on the map, among the world's finest cities.

There seems no doubt that the rivalry between us made our sister state determined that we should not be the premier state any longer, for as you recall, we riot only put a bridge over the Yarra in 1850 at Princes Bridge, but also were the first with the Steam Railway; regrettably we are still resting on these tarnished laurels.

Perhaps you may wonder - where does this bridge have any numismatic connection? For this I quote from the article published in 'The Sydney Morning, Herald', March 19, 1932 :

FIRST PROPHET OF THE BRIDGE

A poem by Erasmus Darwin and I quote "In the Mitchell Library there is a Medallion made by the celebrated Wedgwood Potteries. This has a design of Hope encouraging Art and Labour" - this inspired this prophecy as to the future of Sydney and the erection of the Harbour Bridge.

I will condense this article, which I table for your inspection. In brief - One of Darwin's daughters married a Wedgwood and, after seeing this Medallion and talking to Josiah Wedgwood Darwin wrote what is possibly the first Australian poem in which he made this prophecy :

'There, shall broad streets, their stately walks extend   . . . . '
and so on. Finally,

'There the proud arch, Colossus like – bestride
Yon glittering streams, and bound the chafing tide.'

and yet Sydney had to wait another 144 years to have her bridge.

Here I feel is the second numismatic connection, and once more from the Sydney Morning Herald. Here is the story :

Another Big Bridge - pictured on a Coin : This is a photo of a Roman Coin, showing a profile of Trajus, with the reverse having a design of a bridge, and you can see the similarity between the present structure and this design, which spans a space of nearly 2000 years.

Yet the government (not being numismatically minded) could - or would not strike a special commemorative coin for this historic occasion.

May I recommend you to obtain the Bank of New South Wales 150th Anniversary Recording.

The earliest known proposal was put forward by an ex-convict architect back in 1815 - from then many hundreds of suggestions were put forward. In 1857 Peter Henderson, who had worked with George Stephenson's company, put forward his sketch of how to bridge this gap; this was laughed off as being too impracticable.

Being a very conservative state New South Wales did nothing more until 1900, when designs were called for. One. was finally selected, in 1903, but a change of government caused these plans to be dropped. ..... Time marches on ..... and in 1916 Dr Bradfield recommended a high level cantilever bridge, and eventually legislation was passed on 24 November 1922, called "The Sydney Harbour Bridge Act". From this tenders were called - designs and quotes - and many interesting designs were submitted; some of these showing the styling and designs, I will exhibit.

From this excellent handbook, entitled 'Pylon Lookout' I quote facts and figures:

Design : Dr Bradfield
Contractors : Dorman Long
First Sod Turned : 28 July 1923
Bridge Opened: 19 March 1932
Contract Price : £4,217,721.11.10d.

Length of Span : 1,650 ft [2] - consists of 28 panels
Total Length of Bridge (including approaches) : 2½ miles [3]
Clearance at High Tide : 172'6" [3A4]
Rail Tracks : 2 x Standard Gauge
Footways : 2 x 10' [5]
Roadways : 81' [6] wide of 8 lanes
Capacity per hour: 128 trains, 6000 vehicles, 40 000 pedestrians.

The day finally arrived and 'twas indeed a gala day; a full week end of sporting events. I will table extracts from the Sydney Morning Herald of this great day.

As we recall, it had its pomp and ceremony and even its humour - especially the soap opera part when Captain de Groot, astride his charger, tore past the guards and with his waving sword cut the ribbon and declared the Bridge opened.

No official coinage was issued, but several firms had struck some medallions and medalettes, of which I display the only few I have been able to collect: [7]

Brass Medallion   MM
Obverse :   Bridge Opened 1932
Reverse :   The Store Marcus Clark and Coy Sydney [8]

Medalette Silver Plates   MM   Attached Loop
Obverse :   Shows Bridge
Reverse :   Plain Amor. Sydney [9]

Similar Brass   MM   Attached Loop
Obverse :   Well designed Bridge scene
Reverse :   Plain.   Made in Sydney. [10]

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[2] 503 m (all measurements in Ron's paper were in imperial units; I have left these as they were in the text and I am giving metric conversions as footnotes - Editor)
[3] 4.0 km
[4] 52.60 m
[5] 2 x 3.0 m
[6] 24.7 m
[7] Reference numbers and diameters are from Les Carlisle's book - Editor
[8] C1932/3; 40 mm
[9] Probably C1932/4, but different metal; (27 mm)
[10] C1932/1; 25 mm

Similar Brass   MM   No Loop
Obverse :   Well designed Bridge scene
Reverse :   James Cook   Baker Paddington [11]

Oval Lapel Type Badge   Brass   MM
Obverse :   Bridge scene
Reverse :   Plain

Steel   MM
Obverse :   Plain scene of Bridge
Reverse :   Sydney Harbour Bridge [12]

This striking was made on the head of a bolt, obtained during the building of the Bridge.

Also exhibited is a Pewter Medallion illustrating Bristol Bridge.

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Sydney Morning Herald

Various articles

Handbook - 'Pylon Lookout'

Posters thru the courtesy of Mr Dyson, New South Wales Tourist Bureau, Royal Arcade, Melbourne.

Alan & Margaret Grant - Souvenir Book of Opening.

'Bridge Medallion' - R. Jewell

and

Ed. Philpotts

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[11]   C1932/2; 25 mm
[12]   NIC (ie Not in Carlisle)

ADDENDUM

There were no medals illustrated in the 1969 article. However I have included illustrations of two medals here. The first piece was issued in 1932 for the opening of the bridge. The second piece was issued in 1982 by Sydney coin dealer M R Roberts.

Figure 1 - Medal issued for the inaugural celebrations in 1932 [C1932/5]

Figure 2 - Medal issued for the 50th anniversary in 1982 [NIC]

ADDITIONAL REFERENCE

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OBERKASSEL BRIDGE, DÜSSELDORF

By Frank Robinson, NAV 713

I have been collecting notes with the denomination of one million units for about a decade. Although the standard catalogues show the general and specialised issues that exist, there are always surprises when it comes to notgeld. Notgeld is the emergency money issued by municipal authorities, private businesses, etc. The best known notgeld is from Germany and was issued during or just after World War I.

Immediately after the war, most notgeld was in small denominations (mostly under one mark) because of the shortage of coins. However, as inflation increased, so did the denominations of the paper currency – both the official Reichsbank notes and the notgeld. By August 1923 notes were being issued for one million marks.

A NOTGELD NOTE FROM DÜSSELDORF

Figure 1 - City of Düsseldorf 1 000 000 Mark, 1923, front (shown at 60%)

Several years ago, I obtained a note for one million marks issued by the City of Düsseldorf. The front of this note (Figure 1) is fairly basic with the

written denomination being the main feature. Signed by the Oberbürgermeister (Mayor), this note is dated 15 August 1923 and is part of the fifth issue by this city.

When I looked at the back of the note (Figure 2), I got a surprise. The pictorial design was of a bridge with several arches, two of which closely resembled the Sydney's famous "coat hanger"! This note was issued in August 1923, four months after construction began on Sydney Harbour Bridge (which wasn't opened until 1932).

Figure 2 - City of Düsseldorf 1 000 000 Mark, back (shown at 60%)

DÜSSELDORF

Situated in north-western Germany at the junction of the Rhine and Düssel Rivers, Düsseldorf is the capital of the federal state of Westphalia. Developed from farming and/or fishing settlements in the 7th and 8th centuries, Düsseldorf was a town by 1135 and received its Charter as a city in 1288. from the beginning of the 19th century to 1870, Düsseldorf's population had quadrupled; its industrial growth dates from the 1870's.

After World War I, Düsseldorf was occupied by France from 1921 to 1925. During World War II, the city suffered considerable damage from Allied bombing. Düsseldorf is an important commercial and industrial centre in the Ruhr.

The bridge on the note had the look of a bridge that had been there for some time, but how old was it and did its design have any influence on the design of the Sydney Harbour Bridge?

DÜSSELDORF BRIDGES

Initial research showed that there are currently five bridges across the Rhine in Düsseldorf and that there had been others, at least one of which had been destroyed in World War II. Many of the bridges in this city have been built since the war. However my interest was in the earlier bridges.

DÜSSELDORF SHIP BRIDGE

The first of Düsseldorf's bridges was the Düsseldorf Ship Bridge which was built in 1839 and consisted of a wooden deck laid across a considerable number of boats (or "ships"). From a postcard illustration (Figure 3) of this bridge when compared with illustrations/photos of the Oberkassel Bridge, it appears that Düsseldorf Ship Bridge was built a short distance upstream of the later Oberkassel Bridge. When the latter bridge was built, the Düsseldorf Ship Bridge was demolished.

Figure 3 – Düsseldorf's first bridge: Düsseldorf Ship Bridge

DÜSSELDORF-HAMM BRIDGE (1870, 1912)

This was a steel truss bridge and was used as a railroad bridge. Modified between 1909 and 1912, it was destroyed in 1945.

OBERKASSEL BRIDGE (1898, 1926)

This was a steel arch bridge with a suspended two-hinged deck; it was used for light rail and also as a road bridge. The total length of the bridge was 638 m while that of the two main spans was each 181.25 m. This bridge was inaugurated on 12 November 1898. As shown in Figure 4, this bridge appears to be the same as the one depicted on the note; also its similarity to the Sydney Harbour Bridge is obvious.

Figure 4 – Oberkassel Bridge prior to modifications in 1925-26. This view appears to be from the east bank and from the south side of the bridge.

The Oberkassel Bridge was widened in 1925-26 to enable it to cope with additional traffic. The decorative towers at either end of, and between, the arches were removed. It was used for light rail and as a road bridge. It was destroyed on 3 March 1945 by retreating German troops.

DÜSSELDORF-NEUSS BRIDGE (1929)

The Düsseldorf-Neuss Bridge was the last bridge to be built over the Rhine at Düsseldorf until after World War II. It was also destroyed in 1945.

THE RHEINBAHN

The story of the Oberkassel Bridge is entwined with the Rheinbahn. This story really started in early 1896 when a group of Düsseldorf industrial entrepreneurs formed the company Rheinische Bahngesellschaft AG. The main aims of the company were:

- the construction of the Oberkassel Bridge;
- the provision of passenger and freight rail services;
- the generation and supply of power to the new district of Oberkassel;
- land utilisation, housing and road construction.

Construction plans for the bridge took firm shape on 5 February 1896 when the above group of industrialists proposed that Düsseldorf (on the right bank[1]) should be united with Oberkassel[2], Niederkassel[3], and Heedt[4] (all on the left bank) by building a bridge on the site of the then existing ship bridge. Their proposal also included a railway to link industrial sites on the left bank with Düsseldorf.

On 3 March 1896, the Düsseldorf city council approved the bridge plan and a week later, they approved the rail project. Approval from the Prussian Ministry of Trade, for the construction of the bridge and a local railway between Düsseldorf and Krefeld[5], had already been given on 26 February 1896.

Construction of the bridge was completed on 12 November 1898 and the rail service between Düsseldorf and Krefeld commenced on 15 December. Another line was also built along the left bank of the Rhine to Neuss[6] in 1901.

In 1907 the Düsseldorf city council acquired a share in the company and, as a result, five of the ten seats on the supervisory board. This stake was later increased. This enabled the city council to influence the operation and the development of the Rheinbahn.

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[1]   References to the left and right banks of a river always refer to the side when facing downstream. In this case, the left bank of the Rhine is the western side of the river and the right bank of the Rhine is the eastern side of the river.

[2]   Oberkassel is immediately across the Rhine from the old city of Düsseldorf.

[3]   Niederkassel is immediately north of Oberkassel.

[4]   Heedt is ~4 km west of Oberkassel.

[5]   Krefeld is approximately 20 km north-west of Düsseldorf

[6]   Neuss is on the left bank of the Rhine, approximately 10 km WSW of Düsseldorf

WORLD WAR I AND ITS AFTERMATH

World War I brought about major shortages of food, fuel, and labour in Germany; Düsseldorf was no exception. However Düsseldorf's rail network acted as a lifeline for the city and helped it to survive during the war.

With the end of the war, Belgian troops occupied the left bank of the Rhine and British troops occupied Benrath[7]. This cut the Rheinbahn services to the left bank of the Rhine.

THE DÜSSELDORF STADTBAHN

The Düsseldorf Stadtbahn (Metropolitan Railway) had been formed in 1870 as a horse drawn tram. Electrification of this system commenced in 1895 and was completed by 1900. However its financial situation deteriorated. In December 1921 the Stadtbahn merged with the Rheinbahn.

WIDENING THE OBERKASSEL BRIDGE

In the first decade of the 20th century, it was becoming obvious that the increasing amount of traffic would become to much for the Oberkassel Bridge. Planning commenced in 1912 to widen the bridge, however the outbreak of World War I in 1914 put this project on hold. Planning recommenced after the war ended, however the Allied occupation of the Rhineland (by the French between 17 September 1924 and 17 August 1925) meant that the French agreement had to be sort.

Work commenced on 11 March 1925 and was completed on 20 April 1926. One of the conditions imposed by the river building authority required scaffolding to be removed from the water by 15 December 1925. However ice on the river meant that the scaffolding could not be removed until a week later without the bridgeworks being endangering by ice and high water. That winter the river reached 9.10 m, the highest level recorded since 1784.

It would seem that on the original bridge the trams shared the roadway with road traffic[8] with a separate cycle path on either side. The roadway / tramway used a central arch in the towers at both ends (and centre) of the bridge while the cycle paths had their own smaller arches. As part of the

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[7] Benrath is approximately 12 km south-east of Düsseldorf on the right bank.
[8] Similar to tram lines in some of Melbourne's roads.

widening project, the three towers were removed. It appears that extra arches were built parallel to and outside the existing arches. While the removal of the towers made a small change to the look of the bridge, but the changes to the arches meant that its general appearance remained much the same.

The removal of the towers meant that traffic flow could be greatly improved. After the bridge was widened, there was a dedicated roadway in the centre with dedicated tramway on either side and there was a wider pavement for pedestrians along both sides of the bridge.

Several references refer to the widened bridge as the "Skagerrakbrücke" (Skagerrak bridge). I am not aware of the significance of this name.

WORLD WAR II AND ITS AFTERMATH

This time around the war came to Düsseldorf. The first bombing raids were in 1940 with systematic raids starting in 1942. It appears that the Oberkassel Bridge escaped the aerial bombardment, however with American troops advancing on the city, the defending German troops blew up the three bridges on 3 March 1945 to prevent the Americans crossing the Rhine into Düsseldorf city. However the Nazis surrendered two months later. Over 10 000 citizens of Düsseldorf were killed in the air raids or on the front.

With the loss of the bridges, Düsseldorf was once again a divided city. The occupying military government decided in July 1945 to licence ferry services. These were difficult, and dangerous, due to the ruins of the Oberkassel Bridge in the river.

NEW BRIDGES BETWEEN DÜSSELDORF AND OBERKASSEL

The Freeman Bridge, a pontoon bridge with steel piers and steel decking, was constructed in 1945 close to the site of the Oberkassel Bridge. In December 1947 it was destroyed when a ship collided with it (it had earlier been damaged by ice).

The Oberkassel Temporary Bridge, a steel truss bridge, was built in 1948 to replace the Freeman Bridge. This bridge had four spans each 90 m long and a deck width of 8.20 m. Trams first passed over the bridge on 8 May 1948.

By the late 1960's, it was obvious that once again the bridge connecting Düsseldorf and Oberkassel was unable to cope with the increasing traffic. It was considered necessary for the new Oberkassel Bridge to have the same alignment as the Oberkassel Temporary Bridge, and also that the obsolete bridge should remain in use until the new bridge opened. To solve this problem, the new bridge was built (1971 – 1973) on the upstream side of the Oberkassel Temporary Bridge; the new bridge was provisionally opened 20 December 1973 and then the old bridge was demolished. After the new 35 m wide bridge was placed on slide bearings, it was moved 50 m into its final position on 7-8 April 1976. The new Oberkassel Bridge is a cable stayed bridge and, like its predecessors, carries both road traffic and a tramway.

Figure 4 – The current Oberkassel Bridge. This view is from the east bank and from the south side of the bridge.

The Theodor-Heuss-Bridge was built 1965 to 1969 about 2 km downstream from the Oberkassel Bridge. This bridge links Niederkassel with Golzheim.

The Rheinkniebrücke[9] was built 1953 to 1957 about 1 km upstream from the Oberkassel Bridge. This bridge links Oberkassel with Karlstadt.

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[9]   Literally Rhine Knee Bridge; this bridge is located at a sharp bend in the river.

COMPARISON WITH OTHER SIMILAR BRIDGES

It is worthwhile comparing the Oberkassel Bridge (of 1898 and as modified in 1926) with other similar bridges.

Oberkassel Bridge, Düsseldorf (1898/1926)

- Total length 638 m
- Main spans each 181.25 m

Sydney Harbour Bridge, Australia (1932)

- Total length 4 km
- Main span 503 m

Birchenough Bridge, Zimbabwe (1935)

- Main span 379 m

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CHARLES BRIDGE, PRAGUE

By Mojmír Kovarik & René Vodstrcil

Charles Bridge in Prague (Czech Republic) over the river Vltava (Moldau) was commissioned by King Karel (Charles) IV in 1357 and designed by the court architect Peter Parler.

This 515.8 m long and 9.5 m wide bridge, with 16 arches of uneven length, was built of sandstone with eggs added to the mortar (according to legend) and it replaced the wooden Judith Bridge, which was built in 1170 and spanned the river until the floods of 1342, which swept it away.

The foundation stone of the bridge was laid by King Karel on 9 July 1357, at 5:31 am. This timing was apparently quite deliberate as the digits representing the date and the time can be arranged in a pyramid: 1 3 5 7 (year) 9 (day) 7 (month) 5 3 1 (time).

For thousands of years that section of the Vltava river where Prague was founded, was crossed by trade routes linking northern and southern Europe. The region is replete with Palaeolithic relics and Neolithic farmers inhabited the region from around 5000 to 2700 BC. Celts had settlements in the region from about 500 to 200 BC, and Slavic tribes, ancestors of the present inhabitants, appeared in the course of the 4th, 5th and 6th centuries.

The attraction of the site was a rocky hill on the left bank, suitable for a fortified settlement, and a large expanse on the opposite bank; this served as a campsite, later fenced, for the people who needed a shelter to dry themselves and to rest after passing through the ford.

The oldest record of the site was written a century before William the Conqueror established his foothold in England. The author is the Jewish-Arab merchant Ibrahim ibn Jacob, travelling in the service of the Caliph of Cordova. Christian missionaries had come to the country some decades earlier from Constantinople, but operated in the eastern regions of the Slavic settlements, so Ibrahim met only recently converted Christians doing business around the ford. His report, dating from the year 962 or 966, states, in part:

> "....... the town of Prague is constructed of stone and lime and is the largest town which is devoted to trade. Russians and Slavs come with goods from the town of Cracow. And from the

Turkish regions Muslims, Jews and Hungarians also come with goods and trading coins. They take away slaves, tin and various furs. Their region is the best in the north and best provided with food. For one kirat (small coin) they sell enough grain to supply a person for a month, and for the same price enough barley to supply a horse for 40 days and in addition for this kirat ten hens. In the town of Prague they produce saddles, reins, and solid shields from these regions. In the land of Bohemia they also make light scarves from thin lace like net, with no evident purpose. The price of this is always the same with them: 10 scarves for 1 kirat. They trade in these and use them as a means of exchange amongst themselves. It is their currency and valuation of all things, for them they obtain grain, barley, flour, horses, gold, silver and everything else." [1]

After its completion in 1400, the bridge became a site of great importance and was the setting for trade, law courts and even warfare. Indeed, Charles IV, later elected Holy Roman Emperor (during the Avignon papacy), created a mighty medieval state in central Europe, spanning from the Baltic Sea in the north to the Adriatic Sea in the south.

The bridge is linked with important events in the history of Prague, the Bohemian Kingdom and with the Czech Republic. To note a few events that happened on this stage:

- 1393: Sv Jan Nepomucký (St John of Nepomuk) is thrown to his martyrdom bound and gagged from the bridge;

- 1620: King Fridrich Falcký (Frederick of the Palantine 1619 - 1620) crosses the bridge as part of his continued flight from the battlefield at Bílá Hora (White Mountain) ending his short reign and securing the nickname Winter King;

- 1648: Students of the university and the residents of the Jewish ghetto hold the bridge defending the city from invading Swedish troops.

The bridge is adorned with thirty Baroque statues, the first, a 1683 bronze statue of St Jan Nepomucký, is said to mark the spot from where King Václav IV (Wenceslas – son of Charles IV – sometimes known as "the Drunkard") (1378 - 1419) had the queen's confessor drowned, supposedly for refusing to divulge the queen's secrets or even for having an affair with

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[1]   Kronika českých zemí (Chronicle of the Czech Lands), Anopress 2000, CD ROM

the queen, but more likely due to a political disagreement over the confirmation of the new Abbot of Kladruby. The statue was placed here by the Jesuits as part of a campaign to get this martyred bishop canonised. The success of this campaign led to many other statues being added, including some by leading Czech sculptors. One curiosity is the 1696 bronze cross with a Hebrew Inscription reading, "Holy, Holy, Holy God", which, according to legend, was erected at the order of the court by a Jew who had blasphemed against the cross.

The bridge is framed by imposing towers. The tower in Staré Město (Old Town) is decorated on the landward side with the ornate coats of arms that were part of Parler's original decorations while the riverward side still shows scars from the battle against the Swedes. The two towers in Malá Strana (Little Quarter) are visible on the banknote between the trees at the end of the bridge. The smaller one is the last remnant of the floods of 1342.

Figure 1 - Protectorate of Bohemia and Moravia, 100 Korun, 1940 (shown at 60%)

Throughout its almost 650 years the Charles Bridge was damaged several times by floods and subsequently repaired. The repairs after floods in 1432 had to be "fast tracked" to enable a jousting tournament to be held there in honour of the King Zikmund (Sigmund of Luxembourg – second son of Charles IV) (1420 - 1437) in 1436.

Although now a pedestrian zone, the bridge withstood wheeled traffic for 600 years (including a tram line). In the late 1960s and early 1970s restoration and conservation of the bridge was necessitated by the corrosive effect of salt (used to melt snow in winter) and pollution. This work was

done under the expert leadership of the engineer Leonid Arnautov (son of Russian émigrés who fled the Russian Revolution in 1917).

The background of the bridge is dominated by the Prague Castle, Hradčany and in particular by St Vitus Cathedral. The castle was established during the 9th century, with a Romanesque palace erected during the 12th century. In the 14th century, under the reign of Charles IV, the castle was rebuilt in Gothic style.

The prominent statue on the right of the banknote is regarded by the Czechs to be the legendary knight Bruncvík (from the German Braunschweig). The history of this statue is, however, not quite clear. The original statue, probably of the knight Roland (with legends connected to the Etruscans), adorned the original wooden bridge and could have symbolised Prague becoming a city and the establishment of the rule of law. The statue, which is located on the upstream end of one of the bridge pillars, was badly damaged by a Swedish cannon ball and later reconstructed, with the addition of the coat of arms of Prague, on the shield Bruncvík is holding. According to one legend, Bruncvík's magic sword was entombed in the bridge structure and will be used by St Václav (the Good King Wenceslas (907 - 935) – celebrated in a popular Christmas carol) and his knights coming to save Czechs at the time of their greatest need.

The banknote was issued in the time of the German occupation of Bohemia and Moravia (western parts of Czechoslovakia – now the Czech Republic), which took place from 1939 till 1945. It is believed that by including Bruncvík on the banknote, designer Bedrich Vojtasek intended to boost national spirit at this grim time in the history of the country.

This gesture either escaped the attention of Nazis, or they might have regarded it as promoting the link between Bruncvík and the lineage of the Saxon Braunschweig knights, thus suggesting a historical German connection with these lands.

Today the bridge serves as a stage for musicians and a marketplace for artists and craftsmen. Due to the beauty of the bridge, iconic views of Prague and the activities on the bridge, it is no surprise that it is regarded as the number one tourist attraction in Prague.

CENTENARY OF FLIGHT
PART ONE: TRYING TO FLY – FROM MYTH TO 1903

By Frank Robinson, NAV 713[1]

17 December 2003 marked the centenary of powered flight. It was 100 years since the day when two brothers took turns to be the first people to fly in a powered aircraft. In the century since, aircraft have become bigger, stronger, more reliable, and an everyday mode of transport. An adaptation also transports people to and from space.

However the above two brothers were not the first people to fly; and their aircraft was not the first. The first true airplane was built in 1804, thus 2004 marks the bicentennial of aviation. But even before then, people had travelled aloft.

MYTHS AND STORIES

People had dreamed of flying like birds since ancient times; early ideas usually involved attaching wings to the body of a man. There is the legend (from about 750 BC) of Icarus whose father, Daedalus, attached wings to both himself and his son with wax to escape from King Minos of Crete. While Daedalus escaped successfully, Icarus flew too high and too close to the sun with the result that the sun melted the wax and his wings fell off causing him to fall back to earth and he was drowned in the sea.

About AD 875 at Córdoba (in Spain), Abbas Ibn Firnas is said to have launched himself from a tower in a glider built of wood and feathers. In England, Eilmer of Malmsbury is said to have built a wooden glider and flew about 200 metres about 1010.

In 1680 the Italian physicist and father of biomechanics, Giovanni Alfonso Borelli, showed in his treatise *On the movements of animals* that flight by the flapping of wings with the muscle power of the human arm was not possible. However this hasn't stopped contenders in the "Birdman Rally" on the Yarra River in Melbourne's Moomba festival from attempting to fly!

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[1]   This paper is based on one that Frank presented at NAV meeting No 897 on 19 March 2004

Figure 1 – French medal, 1885 - Preparations for the mythical flight of Icarus

LEONARDO DA VINCI

Leonardo da Vinci (1452 – 1519) is famous for his many designs for machines of many different types. Of interest here is his design for what he called an "ornithopterus" which has the appearance of being a primitive aeroplane. He also drew an "aerial screw" (which could be a primitive helicopter) and a pyramid-shaped parachute.

MONTGOLFIER BROTHERS

The brothers Joseph-Michael (1740 – 1810) and Etienne Montgolfier (1745 – 1799) were the first humans to develop a means that enabled people to fly – they developed the hot-air balloon. Their first successful small-scale experiment was in November 1782. The first public demonstration was on 4 June 1783 at Annonay in France when a 800 cubic metre balloon, made from linen which was lined with paper and coated with alum (for fireproofing), rose to a height of at least 1000 metres and travelled 2 km. The brothers did not fully understand (at least not initially) the reason why their balloons rose – they thought that it was the smoke that caused the balloon to rise and that the more smoke the better. However it is simply the

expansion of hot air, which makes it less dense (ie "lighter"), that causes it to rise.

A larger balloon (1400 m^3) was demonstrated to King Louis XVI on 17 September 1783 in Paris. This balloon carried three passengers – a rooster, a duck, and a sheep. With the success of this flight, another yet larger balloon (2200 m^3), with an iron furnace, was used to take the first humans aloft on 21 November 1783. The two men, Jean-François Pilâtre de Rozier (a physicist) and François Laurent, Marquis d'Arlandes, rose to a height of 900 m and travelled approximately 9 km over Paris.

In a space of only 12 months, the brothers had progressed from an initial test of their idea to a successful manned flight. Only once did one of the Montgolfier brothers fly – this being Joseph on 19 January 1784.
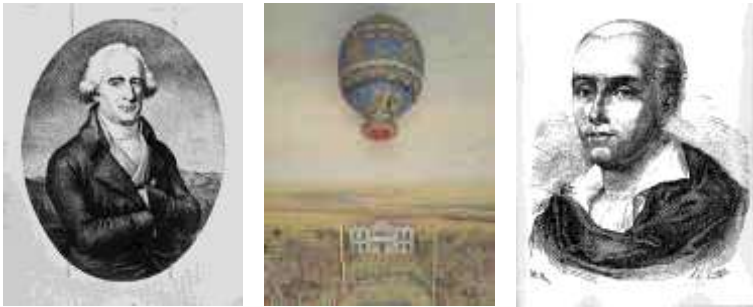
Figure 2 – Joseph-Michael Montgolfier (left) and Etienne Montgolfier (right) and one of their first balloons (centre)

Soon others were making flights. On 4 June 1784 Mme Thible, a French opera singer, became the first woman to make a balloon flight.

Although the popularity of hot-air balloons declined after the development of the dirigible, they continued to used, with various developments, well into the 19th century. However since the 1960s, flights by hot air balloons have regained their popularity which they still maintain to the present time.

Although humans had now flown, it had been by using a "lighter than air" method in which the passengers could not control the direction of their flight. It would be another 120 years before humans would fly in a "heavier-than-air" powered machine. There would be many steps along the way which would involve new ideas, testing of these ideas/theories, new understanding of the science involved, development of new machines and their adaptation to solving the problems of manned flight, and the belief that it was actually possible!

DIRIGIBLES, GLIDERS, AND KITES

DIRIGIBLES

The first ascent with an unmanned balloon filled with hydrogen was made by Professor Charles at Paris on 27 August 1783. Professor Charles, and Robert his assistant, made their fist manned flight in a hydrogen–filled balloon on 1 December 1783. On 7 January 1785 Jean-Pierre Blanchard and John Jefferies became the first to cross the English Channel from Dover to Guines by balloon. The Nassau balloon left London and descended at Nassau in 1836. The first balloon with a steering apparatus was Nadar's balloon which ascended on 4 October 1863 with 14 persons.

In 1852 Henri Giffard (France) experimented with a dirigible; he made his first ascent in a steam-powered airship on 24 September.

The term "dirigible" refers to a rigid airship (which has a rigid internal frame and is filled with a lighter-than-air gas – initially hydrogen was used which is highly flammable). Dirigible is actually a contraction of "dirigible balloon" which comes from the French *ballon dirigeable* meaning a steerable lighter-than-air craft (see text on the medal shown in figure 3). A gondola is attached below the airship; this carries the crew, passengers and cargo as well as the means of propulsion and steering.

Figure 3 –French Medal, 1885 - First experimental French airship

The first fully controllable free flight was made in the electric motor-powered French Army dirigible *La France* by Charles Renard and Arthur Krebs on 9 August 1884. This flight covered 8 km, lasted 23 minutes and landed at the starting point – the first "circular" flight. An 1885 French medal (figure 3) depicts "Science" pointing to a dirigible – presumably *La France*.

On 13 December 1872 at Brünn, Paul Haenlein (a German engineer) tested a gas engine in an airship for the first time. The same year Haenlein also flew the first dirigible powered by an internal combustion engine. Alberto Santos-Dumont constructed, and flew, the first gasoline-driven airship in 1898.

On 2 July 1900 Count Ferdinand von Zeppelin (of Germany) flew his first rigid airship, the *LZ1* Zeppelin from Lake Constance, Friedrichshafen with five passengers on a 20 minute flight.

On 19 October 1901 Santos-Dumont flew his dirigible *Number 6* around the Eiffel Tower in Paris to collect a prize of 100 000 Francs.

Balloons were used for observation purposes by the French in 1794, but the Balloon Corps was disbanded by Napoleon in 1798. Balloons were used as artillery observation posts in the Italian War of Liberation (1860), American Civil War (1861-5), Franco-Prussian War (1870-1), and Spanish-American War (1898). The British Balloon Corps was formed in 1879 and the German Balloon Corps in 1884.

Figure 4 – British Medalet, 1901 – Airship "Nullius Secundus"

The Royal Engineers Balloon School was the first step in the formation of the Royal Flying Corps (in 1912) as a Flying Corps for the Army. The *Nullius Secundus* pioneered military airships in Great Britain. The Balloon School issued a medalet (figure 4) in 1901 depicting the *Nullius Secundus* flying over London to commemorate the accession of King Edward VII and Queen Alexandra.

GLIDERS

In 1799, Sir George Cayley designed an airplane with fixed wings (to give it lift), a moveable tail (to enable it to be controlled), and rows of "flappers" beneath the wings (for thrust).

Then in 1804, Cayley built the first true airplane which basically was a kite mounted on a stick with a moveable tail. Despite its crudity, it proved that his idea worked. From this simple craft has developed the glider, the aeroplane, and the space shuttle. In 1809 Cayley built a full sized version of his glider, he also published his paper *On Aerial Navigation* which, for the first time, set out the scientific principles of heavier than air flight. The principal elements of flight being lift, propulsion and control.

In 1849, Cayley used a team of people running downhill to launch a small glider carrying a 10 year old boy. This was the first known flight by a person in a heavier-than-air machine. The first glider flight by an adult was in mid 1853 and covered approximately 130 m; the pilot being Cayley's coachman. This flight led to more people taking to the air in gliders.

From 1891 Otto Lilienthal developed the first successful manned gliders. Previously it had been assumed that steering airplanes would be simple; however Lilienthal quickly discovered that it required considerable skill to fly a glider and the concept of the airman was born. Lilienthal was killed in a gliding accident in 1896 on his 2500th flight. He left a series of very influential notebooks.

As the twentieth century approached, Octave Chanute collected and organised the aeronautical research that was being conducted. Through him various aviation enthusiasts exchanged information. In 1896, a group of these people experimented with several glider designs on the Indiana shores of Lake Michigan (USA). They found the best design to be a biplane glider with trussed wings. This would form the model for the Wright brothers first gliders.

KITES

The Chinese first used kites about 500 BC. The Greeks may have had kites about 400 BC. Glider kites are believed to have been in use in the Pacific area from about AD 1000. The Mongolian army used lighted kites in the battle of Legnica in 1241. In 1282 Marco Polo reported on manned and ritual kite ascents. Giambattista della Porta published a theory and construction manual on kites.

In 1899 Samuel Cody began experiments with kites that were large enough to lift a person.

Figure 5 – Iserlohn (Germany), 1 mark showing people flying kites, 1927 (shown at 60%)

The flying of kites has remained popular, particularly with children. A German notgeld note from the town of Iserlohn (figure 5) depicts people flying kites on a windy day.

SCIENCE FICTION AND TOYS

In the mid nineteenth century, Jules Verne not only invented science fiction but, due to the wide popularity of his books, encouraged many people to believe in the possibility of scientific advances. In several books he includes flight – either balloon or heavier-than-air craft.

Alphonse Penaud, a pupil of Cayley, furthered Cayley's work. He designed an airplane with a retractable undercarriage and glass-enclosed cockpit. In 1871 he invented the rubber band-powered airplane which became a very popular children's toy. This encouraged children to grow up believing in the possibility of powered flight.

In 1878 Bishop Milton Wright (of the USA) gave his sons, Wilbur (aged 12) and Orville (aged 8) a toy helicopter powered by a rubber band. The two brothers immediately began building copies of it.

OTHER HEAVIER-THAN-AIR MACHINES

In November 1842, William Samuel Henson (an English engineer) drafted a patent for an aeroplane powered by a steam engine; his design was based on Cayley's work. Henson also proposed the formation of an "Aerial Transport Company" which was rejected by the House of Commons.

In 1848 Henson and John Stringfellow built a steam-powered model aircraft with a 3.3 m wingspan. This aircraft successfully flew 40 m before it crashed into a wall; this was the first flight by a heavier-than-air powered craft.

In 1857 Félix du Temple (of France) experimented with clockwork and steam-powered model aircraft. These models achieved the first successful powered flights by heavier-than-air machines.

On 20 September 1874 a steam-powered monoplane, built by du Temple, achieved a small hop after rolling down a ramp. The identity of its human passenger was not recorded.

Thomas Moy (of England) tested a tethered aeroplane (wingspan 4 m) powered by a steam engine.

1877 saw the first flight of a steam-powered model helicopter built by Enrico Forlanini. In 1879 Victor Tatin (of France) built a model aeroplane with airscrews powered by a compressed air motor and successfully flew it.

Hiram Maxim used two steam engines in a large biplane test rig (with a 32 m wingspan); after running down a length of railway track, it made a short captive hop.

From 1891 Samuel Pierpont Langley flew a number of unmanned powered model aircraft. In May 1896 one model flew 1 km; in November the same year another model flew almost 1.3 km.

Various other aircraft were tested during the later part of the 19th century.

LAWRENCE HARGRAVE

Lawrence Hargrave was born in England in 1850 and migrated to Australia in 1865. After conducting five years of explorations in New Guinea, he was elected a member of the Royal Society of New South Wales (RSNSW). He worked at the Sydney observatory for four years, resigning in 1883 to work on aeronautics. From 1884 he presented regular papers to the

RSNSW dealing with his work on flight. He believed in sharing knowledge and did not patent his many inventions.

On 31 December 1884, he built a rubber band powered ornithopter (flying machine with flapping wings) which achieved free flight – this was his first successful experiment.

Over the next several years Hargrave built a number of ornithopter models which succeeded in flying. In June 1887 he began working on engines; over the next five years he investigated engines powered by compressed air, petrol vapour and steam. He also experimented with radial engines (which he invented) and turbines, including kerosene powered turbo-jet engines.

Hargrave discovered, in 1892, the greater lift of a curved wing surface over a flat surface. In January 1893 he began experimenting with kites. After flying one with curved wings in tandem, he flew a kite "of three dimensions" on 10 February and another on 15 or 16 February; the second one was the first true 'cellular kite' or 'box kite'. On 12 November 1894 Hargrave used four box kites to lift himself 5 metres into the air. In August 1895 he sketched plans for a full-sized man-carrier with two cellular biplane wings; it was to be 5.5 m long, 1.8 m high and with a wingspan of 6m.

Figure 6 – Australia 20 dollars, 1973 – Lawrence Hargrave with Model Flying Machines (shown at 60%)

From 1893 Hargrave's work began to be published in North America and Europe. Means's *Aeronautical Annual for 1896* illustrated Hargrave's box kite and, as a result, it was to strongly influence early aeroplane design.

In 1897 and 1899 Hargrave built a number of 'soaring machines' of both monoplane and biplane designs.

In May 1902 he designed a full sized flying machine which was a float plane.

Hargrave wanted his models preserved in a museum where they would be accessible both to the public and for further study. In 1910 he donated 176 models to the Deutsches Museum in Munich; unfortunately most were destroyed by Allied bombing in World War II. The remaining 25 were transferred to the Museum of Applied Arts and Sciences in Sydney in 1960; they are now in the Powerhouse Museum.

POSSIBLE CLAIMANTS FOR FIRST POWERED FLIGHT

In 1894 Bill Frost, a Welsh carpenter, applied for a patent for his invention of a "flying machine" which was a cross between an airship and a glider; it was approved the following year. It is claimed that Frost then built his machine which he flew in the middle of 1896 at Saundersfoot, Pembrokeshire, Wales. Apparently the undercarriage caught in the top of a tree bringing the flight to an end after only 10 seconds.

In April 1899 Gustave Whitehead claimed to have flown a steam powered aircraft, with a passenger, 500 m in Pennsylvania, USA. Whitehead also claimed to have flown his *Whitehead Aeroplane No 21*, another heavier-than-air aircraft at Bridgeport, Connecticut, USA covering 2.5 km, at 10-15 m altitude, and steering to avoid trees. He reportedly converted this aircraft to a flying boat and flew it 11 km on 17 January 1902.

Richard Pearse is reputed to have made a 45 m flight, in a monoplane that he constructed, on his farm at Upper Waitohi, near Timaru, South Canterbury, New Zealand. This flight was not properly documented at the time, but circumstantial evidence indicates that this flight was on 31 March 1903. On 11 May Pearse is claimed to have made another flight of 900 m. It appears that Pearse was not only secretive, but down-played his achievements.

On 18 August 1903 Karl Jatho claimed he flew his airplane a distance of 60 m and reaching a height of a few metres in Germany; there were four witnesses.

None of these four possible claimants (and possibly others) had photographic evidence nor, apparently, made any claims at the time.

WILBUR AND ORVILLE WRIGHT

When they heard of the death of Otto Lilienthal in August 1896, the brothers Wilbur and Orville Wright (who had a business manufacturing bicycles) began a systematic search of the literature on aeronautics. Having observed (in 1898) that buzzards (a bird of prey) controlled their lateral balance by twisting the feathers at the tips of their wings, Wilbur decided to try to copy this method mechanically; their initial experiments were unsuccessful. In May 1899 Wilbur wrote to the Smithsonian Institute requesting published works on aeronautics and received various publications. A year later he was corresponding with Octave Chanute.

In order to control an aeroplane in flight, it is necessary to control its roll, pitch, and yaw. The pilot needs to be able to *roll* the wings left or right, *pitch* the nose up or down, and *yaw* the nose from side to side. However to get the aeroplane into the air, the wings need to give it lift, the aircraft must have sufficient power and yet be light enough to fly (power to weight ratio), and it must be able to reach sufficient speed for the wings to be able to lift the total weight of the aeroplane into the air.

In July 1899, while talking to a customer, Wilbur Wright twisted a box (for a bicycle inner tube) in his hand. He observed that when he twisted one end, the other end twisted in the other direction. He immediately realised that this might work for the wings of a biplane. They then built a biplane kite with a 1.5 m wingspan and with a "wing warping" system which, when tested, worked. This meant they had a means of controlling *roll*.

During the northern spring and summer of 1900 the Wrights planned and built parts for their first glider. In September they set up camp at Kitty Hawk, North Carolina, USA and began testing their glider as if it was a kite. They had their first crash on 10 October. After rebuilding it, they sent Tom Tate (a 10 year old boy) up on the glider. They headed home on 23 October puzzled by the failure of the glider to produce the lift they had calculated, but pleased by the success of wing warping and elevator control.

During the northern winter of 1901-02, the brothers built a wind tunnel to test different wing shapes. As a result, they were able to come up with a design that gave them sufficient lift.

The Wrights tested another glider in July and August 1901, but it didn't perform as well as expected. On 8 October 1902 their modified glider worked perfectly without any tendency to spin – pitch and yaw solved.

The next winter, with the help of Charlie Taylor (their mechanic), they designed and built a petrol engine that was powerful enough to propel their aircraft and light enough that the aircraft would be able to fly. This solved the power to weight ratio. In early 1903, the Wrights began designing their own aircraft propellers. They returned to Kitty Hawk in September and again practiced flying with their 1902 glider.

FIRST POWERED FLIGHT

The stage was now set for an historic flight. On the morning of 17 December 1903, they laid a length of wooden track across the sand for use as a "runway" for the *Flyer*. Perhaps it is best to let Orville Wright tell what happened in his own words. Here is his diary entry for that day:

> "When we got up a wind of between 20 and 25 miles[2] was blowing from the north. We got the machine out early and put out the signal for the men at the station. Before we were quite ready, John T. Daniels, W. S. Dough, A. D. Etheridge, W. C. Brinkley of Manteo, and Johnny Moore of Nags Head arrived. After running the engine and propellers a few minutes to get them in working order, I got on the machine at 10:35 for the first trial. The wind, according to our anemometers at this time, was blowing a little over 20 miles (corrected) 27 miles[3] according to the Government anemometer at Kitty Hawk. On slipping the rope the machine started off increasing in speed to probably 7 or 8 miles[4]. The machine lifted from the truck just as it was entering on the fourth rail. Mr. Daniels took a picture just as it left the tracks. I found the control of the front rudder quite difficult on account of its being balanced too near the center and thus had a tendency to turn itself when started so that the rudder was turned too far on one side and then too far on the other. As a result the machine would rise suddenly to about 10 ft.[5] and then as suddenly, on turning the rudder, dart for the ground. A sudden dart when out about 100 feet[6] from the end of the tracks ended the flight. Time about 12 seconds (not known exactly as watch was not promptly

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[2]   32 – 40 km/hr
[3]   44 km/hr
[4]   11 – 13 km/hr
[5]   3 m
[6]   30 m

stopped). The lever for throwing off the engine was broken, and the skid under the rudder cracked. After repairs, at 20 min. after 11 o'clock Will made the second trial. The course was about like mine, up and down but a little longer over the ground though about the same in time. Dist. not measured but about 175 ft.[7] Wind speed not quite so strong. With the aid of the station men present, we picked the machine up and carried it back to the starting ways. At about 20 minutes till 12 o'clock I made the third trial. When out about the same distance as Will's, I met with a strong gust from the left which raised the left wing and sidled the machine off to the right in a lively manner. I immediately turned the rudder to bring the machine down and then worked the end control. Much to our surprise, on reaching the ground the left wing struck first, showing the lateral control of this machine much more effective than on any of our former ones. At the time of its sidling it had raised to a height of probably 12 to 14 feet.[8] At just 12 o'clock Will started on the fourth and last trip. The machine started off with its ups and downs as it had before, but by the time he had gone over three or four hundred feet[9] he had it under much better control, and was traveling on a fairly even course. It proceeded in this manner till it reached a small hummock out about 800 feet[10] from the starting ways, when it began its pitching again and suddenly darted into the ground. The front rudder frame was badly broken up, but the main frame suffered none at all. The distance over the ground was 852 feet[11] in 59 seconds. The engine turns was 1071, but this included several seconds while on the starting ways and probably about a half second after landing. The jar of landing had set the watch on machine back so that we have no exact record for the 1071 turns. Will took a picture of my third flight just before the gust struck the machine. The machine left the ways successfully at every trial, and the tail was never caught by the truck as we had feared.

"After removing the front rudder, we carried the machine back to camp. We set the machine down a few feet west of the building,

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[7]   53 m
[8]   3.6 – 4.2 m
[9]   90 – 120 m
[10]   240 m
[11]   260 m

and while standing about discussing the last flight, a sudden gust of wind struck the machine and started to turn it over. All rushed to stop it. Will who was near one end ran to the front, but too late to do any good. Mr. Daniels and myself seized spars at the rear, but to no purpose. The machine gradually turned over on us. Mr. Daniels, having had no experience in handling a machine of this kind, hung on to it from the inside, and as a result was knocked down and turned over and over with it as it went. His escape was miraculous, as he was in with the engine and chains. The engine legs were all broken off, the chain guides badly bent, a number of uprights, and nearly all the rear ends of the ribs were broken. One spar only was broken.

"After dinner we went to Kitty Hawk to send off telegram to M.W. (Milton Wright).[12]   While there we called on Capt. and Mrs. Hobbs, Dr. Cogswell and the station men." [13]

The telegram included a request to inform both Octave Chanute and the press. Recognition of the achievement of the Wright Brothers was, at least partly, due to the photograph (figure 7) and immediate publicity.

Figure 7 – Orville Wright during his first powered flight

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[12]   their father
[13]   Orville's Diary 12-17-1903 on www.first-to-fly.com

CONCLUDING REMARKS

I have summarised some of the many activities related to flying that took place in the period under discussion. Many of the people discussed did a lot more than I have listed here. Various other people also made valuable contributions.

Although the Wright brothers did not claim to be the first to fly, they did claim to be the first to make a sustained controlled powered flight in a heavier-than-air machine. However, as we have discussed, others may have beaten them to it.

In the second part of this paper, I will look at the development of powered flight over the century since the Wright brothers flight in 1903.

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POST-WAR MODERN GREEK CURRENCY
PART ONE: 1944 TO 1964

By Bill Xynos, NAV 1112[1]

PROLOGUE

As Greece emerged from the ashes of World War II, its economy was at its worst state since Independence. The external aids were a blessing to the reconstruction of the nation but sadly, the period in discussion was marked by the failure of conservative governments to focus on implementing appropriate economic, political and social policies.

The primary cause of this was the ongoing support of foreign interests in exchange for the much-needed economic and military assistance by the Allies. Without doubt however, the period is remarked by an increase in the living standards and a progressive economic development based on funds from the United Nations and later, from the western Allies, especially from Great Britain and the United States.

Numismatically, the decline of the nation's economy forced the issuance of high-denominated banknotes and the emergence of a new coinage - after an absence of 24 years! Further, the Bank of Greece's banknotes continued the tradition of preserving and displaying elements from the nation's proud history, the War of the Independence and its ancient civilisation and history.

REBUILDING FROM THE RUINS

The economy of the country was in such bad state that academics and economists of the times could not find any arguments against the presented facts. As indicated in my previous article[2], the agricultural produce fell to a third of the pre World War II levels for wheat and dried raisins, to less than 10% for tobacco and down to 60% for olive oil. The industrial production fell to less than 20%. This situation was in fact substantiated by the German Reich Economics Minister, Funk, who claimed "Greece

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[1]   Bill presented this talk to the NAV at meeting No 905 on 19 November 2004.
        Part two will be published in the 2005 edition of *Australian Numismatist*.
[2]   See 'Modern Greek Currency 1927 to 1944' in *Australian Numismatist*, 2003.

experienced the ills of war and suffered its consequences to an extent that perhaps no other country in Europe did"[3]. This was ironic, given that his own government controlled and systematically damaged the economy during country's occupation, but his admission signifies the extent of the damage done.

During the occupation, the total circulation of German and Italian occupation currency was estimated to the value of over 1.1 million gold sovereigns. Also, conservative estimates valued the economy's total losses to over half billion[4] US dollars in early 1945 value. So, with barely any infrastructure, scarce food supplies and weak health services, the impact to the population was enormous and devastating.

The occupying forces agreed to withdraw on 18 October 1944. This was unavoidable as the Red Army was advancing southwestwards across Bulgaria, where they met no opposition; westwards up the Danube Valley and over the Yugoslav frontier; and northwestwards through the Carpathians into Transylvania. The Germans held the threatened communication centers long enough for their withdrawal from Greece and southern Yugoslavia. With the expectation of the city of Belgrade being captured by the Red Army and Tito's Partisan forces, and the successes of the ELAS[5] movement locally, the British Government realised that the window of opportunity for applying political influence over Greece was closing quickly. The continuation of the monarchy was another reason for Greece to remain close to the Western Allies (Great Britain, France and the United States) and keeping the influence of Communism at bay.

Indeed, as the exiled government arrived from Lebanon on 12 October, the British forces had already landed eight days earlier under the pretence of liberating the country from the withdrawing German forces. The political and administrative vacuum allowed some political forces to take advantage of the available British forces.

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[3]   *The Banknotes of Greece – from 1828 until the present day*, Credit Bank Centenary issue, Year 1979, p 175
[4]   The term billion is one thousand million.
[5]   ELAS was the leading resistance force (Hellenic Popular Liberation Force) during the Occupation period of World War II and was able to liberate the whole country by the end of October 1944.

POST-WAR ECONOMIC RECONSTRUCTION

With the liberation of the country now complete, the Papandreou government appointed Professor Zolotas as the Associate Governor of the Bank of Greece[6]. With a Greek administration at its infancy, the British Military Command took over with the distribution of the food supplies and other procurements. This allowed the Bank to focus on stabilising the currency. The 11 November 1944 Law No 18 assured the population of its measures establishing a new currency, the ***new drachma***[7], being backed up by its gold and foreign currency reserves worth £43 million. Initially, the exchange was made with English military pounds that were at par with the regular English pound. Then, it was exchangeable to 600 new drachmas and each new drachma was exchangeable to 50 billion occupation drachmas. The Bank supported the relationship of the gold pound (sovereign) to the drachma at the preferred rate of 2850.

Figure 1 – 100 Drachmas, The Bank of Greece, undated c.1944, depicting Kanaris and a burning ship, [Pick No 170] (shown at 60%)

For small change currency, the Bank opted to continue with the issuance of paper currency due to the scarcity and high value of metal. These notes titled 'Kingdom of Greece' (Βασιλειον Της Ελλαδος) have values of **1**, **5**, **10** and **20** drachmas (Pick[8] Nos 320 to 323) and were released in November 1944. This group was supplemented with the Bank's own **50** drachmas

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6 Within this document, the Bank of Greece is referred to as the Bank.
7 The term 'new drachma' identifies and distinguishes the New Greek currency from the old and inflated occupation drachma.
8 The reference 'Pick' relates to the original author of the '*Standard Catalog of World Paper Money*', regarded today by banknote collectors and numismatists as the key catalogue reference for world banknotes.

note of Nike of Samothrace (Pick No 169). According to SCWPM[9], the Bank also released two more notes into circulation in that year (the release date was 9 November according to Pylarinos).

As shown in figures 1 & 2, the first one is the well-designed **100** drachmas blue banknote printed by Waterlow & Sons. The famous statesman **Konstantinos Kanaris**[10] and a graphic example of his naval actions appear on the front of the note. He achieved fame as a naval officer during the War of Greek Independence (1821-1832) with his effective use of fire ships against Turkish shipping in Greek waters. One of his significant actions was the destruction of the Turkish Admiral's flagship off the island of Chios on 18 June 1822 and the following chase and retreat of the remaining fleet to the Dardanelle Straits. His continued burning and sinking of more Turkish ships off Tenedos in November 1822, and off Samos and Lesbos in June 1824, the harassment of Egyptian squadrons attempting to capture Crete, and the August 1825 attack on Muhammad Ali's Egyptian fleet at Alexandria were further proof of his heroism, naval skills and abilities, against all odds. Kanaris served as Prime Minister in 1848-49 and helped depose King Othon (Otto) in 1862. The reverse of the banknote portrays the allegorical figure of 'Glory' (figure 2).

Figure 2 – 100 Drachmas, The Bank of Greece, undated c.1944, depicting Doxa (Glory) [Pick No 170] (shown at 60%)

The second one is the **1000** drachmas brown banknote printed by Bradbury Wilkinson (Pick No 172). Another famous statesman, **Theodoros**

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[9]   SCWPM stands for the '*Standard Catalog of World Paper Money*', published by Krause.
[10]   Konstantinos Kanaris was born in the island of Psara in 1790 and died in Athens on 14 September 1877

Kolokotronis[11], appears on its front. He was a patriot and member of the Greek revolutionary society *Philiki Etairia* and a prominent figure in the War of Greek Independence. One of his most brilliant and famous actions was his major plan and participation in defeating Mahmud Dramali's Ottoman army in August 1822. Much later, in defiance of the central government, he was imprisoned but was released to defend the Morea against the Egyptians. In 1828, he supported the President, Count I A Kapodistrias and, after his assassination, he set up a rival administration to that favouring Prince Othon (Otto) of Bavaria. He was condemned to death on 7 June 1834, but was later reprieved. On the banknote's reverse, there is a portrait of a soldier (evzon) in traditional Greek 'War of Independence' costume.

Back to the present political situation, British military operations against the ELAS movement commenced on 5 December. In effect, a Civil War began and caused panic across the population of Athens. Soon, the operations intensified, with food supplies worsening and the inhabitants of the capital panicking. The movement withdrew from Athens but later, after the loss of many lives, the leadership of the EAM[12] movement reached an agreement with representatives of the Plastiras administration for a ceasefire. Signed in Varkiza[13] on 12 February 1945, this agreement ended the Civil War and effectively demilitarised all liberating forces (including ELAS), arranged for the total withdrawal of the British forces, and established proper criteria for the organisation of the new Greek army. The agreement also arranged a timetable for all current holders of public and administrative positions across all public and law enforcement institutions to be examined and approved, based on criteria of conduct during the occupation, of character and of performance.

YEAR 1945

The Plastiras government's policies didn't improve the economy, or its food supply program. By May, only 30% of the circulating currency had Bank backing and the printing of more banknotes and of high-denomination values was a short-term solution for combating the demand and inflation.

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[11]   Theodoros Kolokotronis was born in Messenia in April 1770 and died in Athens on 15 February 1843.

[12]   EAM (Hellenic Liberating Front) was the political body representing ELAS, its military arm.

[13]   Varkiza, a southern suburb of Athens.

The Bank began its second currency reform under the 4 June 1945 Law No 362, under which the English paper pound was now worth 2000 drachmas and the US dollar 500 drachmas.

In January, the **50** Drachmas brown note was released (Pick No 168). It has the portrait of the Greek poet **Hesiod**[14]. Printed by Thomas De La Rue, banknote collectors might recollect that the same note dated 1 January 1939 was issued in green and printed by the same printer. Hesiod was one of the earliest Greek poets and lived in Boeotia, a central district of Greece around 700 BC. Surviving complete epics of his are *'Theogony'* (myth of the gods) and *'Works and Days'* (describing peasant life).

The Bank also issued the new **500** Drachmas green note with the portrait of **Kapodistrias**[15] (figure 3) and **Athens University** (figure 4).

Figure 3 – 500 Drachmas, The Bank of Greece, undated c.1945, depicting Kapodistrias [Pick No 171] (shown at 60%)

Kapodistrias's portrait is a detail from a portrait by an unknown artist, held in the Historical and Ethnographic Museum of Greece in Athens. He entered the Russian Foreign Service in 1809, became an expert on Balkan affairs and earned a post with the commander of the armed forces on the lower Danube River in 1812. After marching north to oppose Napoleon's advance, he was assigned as a diplomat to the army staff. In attending the Congress of Vienna (1814-15), he became an adviser of the Emperor

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[14] Hesiod lived in Boeotia (a district in central Greece) about the 8th and 7th centuries BC.

[15] Ioannis Kapodistrias was born in Corfu on 11 February 1776 and was assassinated in Nafplion on 9 October 1831. For further information, see 'Ionian Islands and I. Kapodistrias' in the *Australian Numismatist*, 2000.

Alexander I but his concerns about the Holy Alliance with Austria and Prussia and objections to Austria's suppression of the Naples and Piedmont revolts (1820-21) attracted many diplomatic enemies. When the Emperor refused to support the Greek revolt, he resigned from the Russian service and continued supporting the Greek revolt from Geneva. Elected as the first president of Greece by the Assembly of Troezene, since his arrival at Nafplion (provisional capital) in January 1828, he worked to organise an effective government apparatus and to align semi-autonomous local leaders to the authority of the new state. Kapodístrias applied his diplomatic experience fully for negotiating the boundaries of the new state, and tried hard to create the infrastructure of a state in a country that had been ravaged by a vicious and destructive war. Schooled as he was in the traditions of Russian autocracy, Kapodístrias paternalist and authoritarian style of government offended a number of key elements in the power structure of the embryonic Greek state. Growing unrest resulted in his assassination by the Mavromikhalis brothers as he entered a church in Nauplion.

Figure 4 – 500 Drachmas, The Bank of Greece, undated c.1945, depicting Athens University [Pick No 171] (shown at 60%)

The **5000** Drachmas red note (Pick No 173) was issued with the allegorical drawing of a **woman with her infant**, and the **10 000** Drachmas orange note (Pick No 174) with the effigy of **Aristotle**[16]. Aristotle was a Greek philosopher, logician and scientist who characterised the orientation and content of all that is termed Western civilization. He was the son of the court physician to the King of Macedonia and was introduced to medicine and biology at an early age. After the death of his father, he was sent to the

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[16]   Aristotle was born in Stagirus, Macedonia in 384 BC and died in Chalkis in 322 BC.

Athenian Academy of Plato (367 BC) and there engaged in dialogue for 20 years. On Plato's death (348 BC), he left and travelled for 12 years and established new academies at Assus and at Mytilene. He lived in Pella (capital of Macedonia) for three years and tutored the future Alexander the Great and retired to Stagirus in 339 BC. In 335 BC he returned to Athens and devoted to scientific work and opened the institution of Lyceum, the centre for speculation and research in every aspect. On the death of Alexander in 323 BC, anti-Macedonian agitation broke out in Athens and Aristotle withdrew to Chalcis.

Back to the current economic situation, minor improvements following the April 1945 introduction of the UN Relief and Reconstruction Administration Aid (UNRRA) didn't convince Varvaressos, the then Minister of Coordination (past Governor of the Bank in June 1942), that his policies had worked and he resigned in September. According to Pylarinos, the release date for the undated 1945 banknotes was 9 November 1944.

YEAR 1946

During the Tsouderos administration, the Bank saw the necessity of reforming the economy further. The parity of the British pound was set to 20 000 new drachmas and of the US dollar to 5000 new drachmas. While some encouraging economic improvements were noticed, the questionable result of a referendum allowed George II to return as the King of Greece. Soon, the country entered into a depressing period and another Civil War was begun by the *Democratic Army of Greece*[17] in late September.

According to SCWPM, the Bank issued two banknotes in that year. According to Pylarinos, the release date was 9 November 1944. The **10 000** drachmas note (Pick No 175) was the same as the 1945 banknote, with the same dimensions (180 x 90 mm) but in blue colour. Also, the new **20 000** drachmas green note (Pick No 176) carries the effigy of the goddess Athena. Again, I assume that the demand for high-denominated notes reduced the production of low-denominated banknotes, making them worthless, thanks to the inflation.

Tsouderos reached an important monetary agreement with Great Britain's Bevin administration, under which the British Treasury granted Greece a

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[17]   The EDA or Democratic Army of Greece (Hellenic Democratic Army) was established to fight foreign-supported forces.

loan of £10 million for stabilising the currency and assisting the infrastructure by the procurement of essential tools, machinery and transport equipment. Also, Great Britain withdrew the repayment claim of £46 million (advanced to Greece during the war period), in exchange for its Treasury participation in a newly established Greek Currency Committee (GCC). This body would have the appropriate statutory powers of overseeing the issuance of paper currency, credit and related policies.

YEARS 1947 TO 1949

Throughout 1947, the efforts of the GCC and the Bank seemed to stabilise the inflation as reflected by the stability of the exchange rate of the gold pound. But the UNRRA ended its assistance to Greece as it reached US$400 million. The British also ended their military aid but the United States took over that responsibility under the AMMAG[18] program. President Truman's Doctrine, that was declared in March 1947, also encouraged this move. It pledged support for "free peoples" in their fight against internal subversion.

As a new Civil War started, the communists established a provisional democratic government and continued supporting the EDA movement. Soon, they were able to control a wide area of northern Greece for a substantial period of time by maximizing their limited resources and using EDA's guerrilla tactics effectively. However, the Greek government used the Truman doctrine to allow American intervention and utilise external military support for fighting against the communists. With the schism between Tito and Stalin and the communists' internal factionalism the guerrillas were finally defeated by September 1949.

The Bank issued four banknotes in 1947. The first note, released on 9 January 1947, was the **1000** drachmas brown note (Pick No 180a) depicting **Kolokotronis**. The other notes, which were not dated, were released during that year (according to SCWPM): the **5000** drachmas purple note (Pick No 177) with **woman and infant**, the **10 000** drachmas orange note (Pick No 178) with the effigy of **Aristotle** and, finally, the **20 000** drachmas green note (Pick No 179) with the effigy of the goddess **Athena**. These notes had their sizes reduced to 153 x 80 mm, with the exception of the 1000 drachmas that has dimensions of 145 x 75 mm.

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[18] AMMAG – The American Mission for Military Aid to Greece was commenced under the findings of the Porter Mission study.

Again, Pylarinos claims that the release date for the last three banknotes was 9 November 1944! This is the last time that related information from the two sources is mismatched. Certainly, the large gap between the two dates prompts us for further study, but for the benefit of this article, the SCWPM source should be trusted.

The Civil War seemed to deteriorate the economy, as more banknotes were needed. In June 1947, the 5000 drachmas banknote (Pick No 181) was released with its colour changed from purple to brown. The remaining three notes were reissued: the 1000 drachmas note (Pick No 180b) with no size changes in November; the 10 000 drachmas banknote in orange colour and size reduced to 150 x 79 mm (Pick No 182) in December (figure 5); and, after an absence of many months, the 20 000 drachmas Athena banknote in blue colour and size reduced to 147 x 78 mm (Pick No 183) in December 1949. As far as the production of the banknotes is concerned, the 1000 drachmas note was the first one printed at the Bank's new printing facility[19] in Holargos, a suburb of Athens. Since November 1947, this facility was used for producing the country's banknote currency requirements. The idea of printing the Greek banknotes locally was conceived as early as 1938 but the outbreak of the war prevented these plans taking shape.

Figure 5 – 10 000 Drachmas, The Bank of Greece, 29.12.1947, depicting Aristotle [Pick No 182] (shown at 60%)

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[19]   The printing facility named on many banknotes in fine print as ΙΔΡΥΜΑ ΤΡΑΠΕΖΗΣ (ΤΗΣ) ΕΛΛΑΔΟΣ, or in English, Institute (of the) Bank (of) Greece.

Finally, with the closure of the Civil War and the elimination of the EDA movement, the Communist Party was outlawed in 1947[20]. By the end of 1947, the drachma had lost one-third of its purchasing value.

YEARS 1950 TO 1952

The continuing policy of avoiding metallic coinage issuance was proven as prudent due to the uncontrollable inflation and its effect on the economy. The Bank issued in October and December 1950 two new notes. The first one is the **5 000** drachmas brown note (Pick No 184) depicting national poet **Solomos**[21] and the second one is the **50 000** drachmas note (Pick No 185) with **woman** and **temple ruins**.

Count Dhionisios Solomos was a poet and, despite his earliest writing in Italian, he was determined to write in the spoken tongue of Greece. Inspired by the wide culture and lyricism, he composed the *Hymn to Liberty* in 1823 and wrote his poem on the death of Lord Byron in 1824-25.

Figure 6 – 1000 Drachmas, Kingdom of Greece, 10.7.1950 [Pick No 326a] (shown at 60%)

Also, under the title 'Kingdom of Greece', three small notes were issued in July 1950, the **100**, **500** and **1000** drachmas depicting, in order, Constantine / church, a Byzantine coin / church and an ancient coin (figure 6) / lion (Pick Nos 324a, 325a and 326a).

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[20] Ever since, some members of the Communist Party (KKE) disappeared, whereas many supporters were monitored, captured for interrogation for obvious reasons. In some cases, many imprisoned were tortured, as related archival material and evidence by witnesses and survivors were progressively surfaced and revealed to the public since 1974.

[21] Count Dhionisios Solomos was born on 8 April 1798 in Zacynthus and died on 21 November 1857 in Corfu.

In 1950, the political decision was taken for Greece to participate in the Korean War which proved later to be disastrous to the economy. Grand promises by the Americans that after the war, '*the Greeks will be eating (their food) with golden spoons*' became a legend of those days. With this addition to the list of promises made, many Greek soldiers were enlisted; but the war consumed vast amounts of precious financial assistance allocated for reconstruction and development purposes. The cost of living increased, forcing the expansion of money in circulation and the consequent increasing demand for gold. Greece entered the NATO Alliance on 20 September 1951.

The Plastiras administration became another one, of a series of post-war governments, which continuously tackled the immediate problems of reconstruction, as well as implementing anti-inflationary policies that in reality were ineffective. With the Korean War straining the economy, Plastiras instructed for the preparation of an economic report. Its scope was focused on the dependence on foreign aid, the current monetary instability, the balance of payments accounts and the reorganisation of the administration. Completed in January 1952 by Varvaressos, the study included a confidential section that proposed the devaluation of the drachma with respect to the US dollar between the range of 15 000 and 20 000 drachmas.

In the meantime, Greece's ever-increasing reliance on the United States in economic and military terms was revealed in 1952, when the Marshall Plan was terminated. The total aid to Greece had reached the staggering amount of 13 billion drachmas. In the face of economic disaster, the emergence of the Hellenic Rally Party (Ελληνικος Συναγερμος) and its popularity wasn't surprising. The HRP reached its zenith at the November 1952 elections when its founder, Papagos, won the election. His conservative right-wing policies perpetuated the rapid economic and social development by improving the living standards and expanding the chasm between the poor and the rich, at the expense of disregarding democratic values and undermining opposite political forces.

YEAR 1953 - THE DEVALUATION OF THE DRACHMA

On the evening of 9 April 1953, the Papagos administration took the significant step in restoring the currency by changing the parity to the US

dollar from 30 000 drachmas to 30 **new drachmas**[22]. This decision was reached after consultations with the Bank, the Greek Currency Committee and the International Monetary Fund. Effectively, this meant dropping the last three noughts of denominated values and the devaluation of the drachma.

By studying the media reactions on the following day, this measure was in historical and economic terms as important as the set parity between the occupation drachma and the new drachma, just after the war.

'The Nightly' (Η Βραδυνή) newspaper reflected the public's panic on its editorial concerns to the economic measures taken by the Ministry of Coordination. However, it also pointed out the public's amnesia of the inflation (after the war) and the economic measures taken ever since for controlling it and strengthening the currency. The reports and commentaries presented the benefits of the devaluation, such as the liberation of market forces and commercial transactions, and the expectations of realistic exchange rates between the drachma and other currencies. The paper finally claimed that this action would assist the export of primary produce, services, and improve tourism.

The newspaper 'Forward' (Εμπρός) claimed that the government ordered food provisions worth over one trillion[23] drachmas in order to control internal pricing structures. The relevant ministries placed prohibitions of price fixing with harsh penalties for lawbreakers. The paper also claimed that import of goods would be freed and borrowing in foreign currency would be allowed, excluding transactions in gold currency.

The newspaper 'The Dawn' (Η Αυγή) commented that the measures effectively made the country dependent (to foreign market forces) and that the public will now look after its economic survival. It mentioned the public rushing to invest its few funds and buy essential goods; and that wholesalers were stockpiling goods in expectation of price increases.

In that year, the enactment of Law No 2687 was important for regulating private foreign investment in Greece. Also, the second in strength commercial bank, the Bank of Athens, merged with the Bank of Greece.

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[22] Again the term 'new drachma' is used for distinguishing the devalued currency from the 'drachma' before that event.

[23] In this article, one trillion is one million million, or one thousand billion.

In November 1953, the Bank reissued the three small banknotes of July 1950 with the same depictions, dimensions, and colours (Pick Nos 324b, 325b and 326b). Interestingly, in that year, Waterlow & Sons were instructed to design banknotes of **1**, **5** and **10 new drachmas** but these were not issued. According to SCWPM, these notes exist only as Specimens (Pick Nos 185A, 185B and 185C).

YEARS 1954 – THE EMERGENCE OF COINAGE

Following the devaluation, the prospect of issuing a new coinage seemed to have been revived. With no evidence, I'm speculating that, perhaps, this was the reason for cancelling the production of the Waterlow notes. Indeed, in April 1954, the country embraced the circulation of coins, not seen since 1930.

Figure 7 – 50 Lepta, 1, 2 and 5 Drachmas, Kingdom of Greece, 1954 [Krause Nos KM 80 to 83]

Vasilios Falireas was involved with the designing and engraving of all the coins discussed in this article[24]. Following his top marks graduation in 1928 from the Athens School of Arts, he accepted a scholarship in Paris and continued his studies under Margiol, D Galanis and Drompsy until 1935. His artistic and sculpture activities intensified and soon participated in many international exhibitions. He received the silver and gold medal of the 1937 International Paris Exhibition, and a diploma with medal at the 1955 Amsterdam University. An example of his best work is the

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[24] Vasilios Falireas was born in Athens in 1905 and died in Thessaloniki in 1979.

monument of the Spartan King Leonidas and his fallen 300 Lacedaemonians at Thermopylae.

The higher denomination coins (figure 7) were made of copper-nickel and were struck at the Paris Mint. The denominations struck were **50** Lepta, **1**, **2** and **5** Drachmas. Each coin has a common obverse design of the effigy of King Paul, and common reverse design of the Greek Royal Arms with denomination and title inscriptions.

Figure 8 – 5, 10 and 20 Lepta coins, Kingdom of Greece, 1954 [Krause Nos KM 77 to 79]

A series of aluminium coins of **5**, **10** and **20** Lepta (figure 8) was also introduced. These were struck at the Bern Mint with no mintmarks and have a hole at their centre with corresponding diameters of 3.3, 4.3 and 4.8 mm. While the design didn't incorporate the King's effigy, the royal crown with laurels were represented on the obverse with the circular inscription of 'Kingdom of Greece' and date. On the reverse, the denomination with corresponding agricultural themes of wheat, grapes and olives is shown.

With the banknotes, the devaluation allowed the Bank to introduce the new currency notes of **10**, **20** and **50** drachmas (Pick Nos 186, 187 and 188). Dated 15 January 1954, the designs of the notes used the existing designs of the old 10 000, 20 000 and 50 000 drachmas notes with no colour changes. I speculate that this was done for the public to familiarise with the banknotes and accepting the 'dropping' of the last three noughts, due to the devaluation. Additionally, the notes were inscribed with the term 'New Issue' (Νέα Εκδοσις), signifying the currency's departure from the pre-devalued drachma.

In March and May, the Bank introduced the newly designed **100** drachmas red note (Pick No 192a) and **10** drachmas orange note (Pick No 189a). The design on the March note (100 drachmas) introduces the effigy of **Themistocles**[25] and an **ancient warship**. An Athenian politician and naval strategist, Themistocles was the creator of Athenian sea power and the chief savour of Greece from subjection to the Persian Empire in 480 BC. As an archon (chief judicial and civilian executive officer) of Athens, he began the development of Piraeus, the port of Athens. From 483 BC, he overcame political opposition to enlarge the Athenian fleet and induced Sparta and other Peloponnesian communities to adopt his naval strategy. He was therefore responsible for the victory over King Xerxes I's Persian ships off Salamis in 480 BC. The depicted warship on the banknote is an example of those used for attacking the trapped Persian fleet.

The design on the May note (10 drachmas) uses the effigy of **King George I**[26] and a church on its reverse. Born as Prince William, the second son of King Christian IX of Denmark, he was nominated to the Greek throne by Britain, France, and Russia after the first Greek King, Othon (Otto), was deposed in 1862 after the resolution of October 1862. The National Assembly accepted William as King of the Hellenes in March 1863, and he ascended the throne as George (Georgios) I on 31 October. He became one of the most successful constitutional monarchs in Europe and during his reign, Greece was developed as a modern European state.

YEARS 1955 TO 1957

The political picture of the country changed with the death of Papagos in 1955. King Paul invited Constantine Karamanlis, the then Minister of Communications and Public Works, to form a new government in October. Four months later, he formed a new Party, the Hellenic Root-breaker Union (EPE) Party that won the February 1956 elections. In the past, Karamanlis held many ministerial positions during the Papagos administration and was proven a very able and productive politician. As the new Prime Minister, he followed past policies for modernising the country but his successes were counteracted by repressive internal policies.

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[25]   Themistocles was born in 524 BC and died in 460 BC.

[26]   King George I was born on 24 December 1845 in Copenhagen (Denmark) and was assassinated on 18 March 1913 in Salonika (Greece).

The 100 drachmas and 10 drachmas banknotes were reissued with the same designs in July and March 1955 (Pick Nos 192b and 189b) and complement the newly designed March 1955 blue **20** drachmas note (Pick No 190) depicting **Demokritos**[27] and the **50** drachmas green note (Pick No 191) depicting **Perikles**[28] (figures 10 & 11).

Figure 9 – 100 Drachmas, The Bank of Greece, 1.7.1955, depicting Themistocles and ship [Pick No 192b] (shown at 60%)

Figure 10 – 50 Drachmas, The Bank of Greece, 1.3.1955, depicting Pericles [Pick No 191] (shown at 60%)

Demokritos was a Greek philosopher who was important in the development of the atomic theory of the universe. Knowledge of his life is limited but it was said that he was a wealthy citizen of Abdera in Thrace and travelled widely in the East and that he lived to a great age. Despite the widespread cover of his 73 said works on human knowledge, only a few fragments have survived. According to his theory, an infinite number of eternal and uncaused atoms (invincible and differing from each other in

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27   Demokritos was born around 460 BC and died around 370 BC.
28   Pericles was born in Athens around 495 BC and died in Athens in 429 BC.

shape, arrangement, magnitude and position) move through infinite space (void) that is existent and therefore real. By using this theory, he explained the origin of the universe, the concept of the soul, the desire to explain extraordinary phenomena by attributing popular belief in the gods, and the ultimate good as a peaceful state of the soul.

Figure 11 – 50 Drachmas, The Bank of Greece, 1.3.1955, depicting Pericles lecturing near Acropolis [Pick No 191] shown at 60%)

Pericles was a statesman who brought ancient Athenian democracy to its height and almost established Athens as the leading power in Greece. Born into a wealthy family, his early career saw the cessation of war with other Greek states (451 BC) and Persia (450 BC). He embarked upon a program designed to make Athens the political and cultural focus of Greece. His achievements included the construction of the Acropolis which was begun in 447 BC. He was deposed as an Athenian general during the Sparta War in 431 BC but was returned to office, before his death.

In August of 1955, the newly designed **500** drachmas green note (Pick No 193) depicting **Socrates**[29] came out and the need for a new denomination of **1000** drachmas was satisfied in April 1956 (Pick No 194) with the brown banknote depicting **Alexander the Great**[30], whose portrait appears on the back of the banknote. This is a detail from a mosaic that shows Alexander's decisive victory over King Darius's Persian forces at the battle of Issos toward the end of 333 BC. The mosaic, from the second century BC, was found in a house during the excavation works at Pompeii, a copy of which was reconstructed and is kept at the Naples Museum.

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[29] Socrates was born around 470 BC in Athens and died in 399 BC in Athens.
[30] Alexander the Great was born in 356 BC in Pella (Macedonia) and died in 323 BC in Babylon.

Socrates was an ancient Athenian philosopher and part of a dynamic group of intellectual ancient Greeks (Socrates, Plato, and Aristotle) who laid the philosophical foundations of Western culture. As Cicero said, Socrates "brought down philosophy from heaven to earth", from studying speculations from the cosmologists of the times to analyzing the character and conduct of human life and the ethical dimensions of life.

Figure 12 – 1000 Drachmas, The Bank of Greece, 16.4.1956, depicting Alexander at the battle of Issos [Pick No 194] (shown at 60%)

Figure 13 – 1000 Drachmas, The Bank of Greece, 16.4.1956, depicting Alexander [Pick No 194] (shown at 60%)

Alexander the Great was also known as Alexander III. He was King of Macedonia from 336 BC and overthrew the Persian Empire, expanded his military expedition as far as India and laid the foundations for the Hellenistic influence and civilisations across many territorial kingdoms. Son of Philip II and Olympias (daughter of King Neoptolemus of Epirus),

from age 13 to 16 he was taught by Aristotle, who inspired him with an interest in philosophy, medicine, and scientific investigation. During Philip's attack on Byzantium in 340 BC, Alexander defeated the Maedi (Thracian people) and two years later he commanded the left wing at the Battle of Chaeronea, in which Philip defeated the allied Greek states. Alexander and his mother fled to Epirus and later Illyria, following his father's divorce, but shortly afterwards, father and son were reconciled and Alexander returned. In 336 however, on Philip's assassination, Alexander, acclaimed by the army, succeeded without opposition. He at once executed all plotters alleged to be behind Philip's murder, along with all possible rivals. He then marched south, recovered a wavering Thessaly, and at an assembly of the Greek League at Corinth was appointed the leader of all Hellenistic forces for the forthcoming invasion of Asia.

Returning to Macedonia by way of Delphi (where the Pythian priestess acclaimed him "invincible"), he started with lightning campaigns through Thrace in 335 BC and marched against the Triballi and Illyrians, which took him across the Danube. A rumor of his death initiated a dangerous revolt of Theban democrats affecting surrounding states and within 14 days Alexander marched 380 km from Pelion (near modern Korçë, Albania) in Illyria to Thebes. The Thebans refused to surrender and when Alexander entered their city, it was razed to the ground, sparing only temples and Pindar's house. The other Greek states were cowed by this severity, and Alexander could afford to treat Athens leniently and left Macedonian garrisons in Corinth, Chalcis, and the Cadmea (the citadel of Thebes). He left behind his general Antipater as governor of Greece, with 12 000 foot soldiers and 1500 cavalry, while taking 40 000 foot soldiers (12 000 of them Macedonians) and more than 6 000 cavalry with him to Asia.

Back to the numismatic arena, the copper-nickel coins were minted again in 1957, with the exception of the 5 drachmas coin.

YEARS 1958 TO 1963

On the political front, despite the emergence of a coalition of republican and centre-left politicians, Karamanlis won the 11 May 1958 elections. This resulted in the splitting of the coalition and the formation of the Unified Centre Party (Ενωσις Κέντρου) under the leadership of George Papandreou.

In 1959, **50** lepta, **1** and **2** drachmas copper-nickel coins were struck as well as the aluminium coins of **10** and **20** lepta. This group of coins was complemented by the new **10** drachmas nickel coin struck by the Bern Mint (figure 14).

Figure 14 – 10 Drachmas, Kingdom of Greece, 1959 [Krause No KM 84]

This new coin uses a design similar to that for the copper-nickel coins but the inscription's font, the royal arms' style and the King's effigy are slightly different and modern.

In 1960, silver was introduced to the Greek circulating coinage for the first time since 1930. Minted in London, the silver coin of **20** drachmas is a very elegant and well-designed coin. On reverse, it depicts Selini, the goddess of Charm from Greek mythology. She emerges from the Seas on a horse and salutes the World, with a dolphin swimming nearby on the waves.

Figure 15 – The 'Selini' silver 20 Drachmas coin, Kingdom of Greece, 1960 [Krause No KM 85]

The obverse uses the effigy of the King that's virtually the same as that used for the 1954 copper-nickel coins. This coin weighs 7.5 grams and has a diameter of 26 mm. Its rim has the inscription 'Kingdom of Greece'.

Back to the political front, the electorate became disenchanted with the past and current repressive policies and were looking for change. Karamanlis won the elections of 29 October 1961 again under an atmosphere of instability and bribery. By gaining an absolute majority, he continued the same past policies that would eventually bring his downfall. The Unified

Centre Party emerged with a gain of 79 parliamentary seats, out of the total of 300 seats.

In 1962, the **50** lepta, **1** and **2** drachmas copper-nickel coins were minted again. The following year marked the Centenary of the Greek Royal Dynasty. Numismatically, this was celebrated by the minting of 3 million silver coins by the Paris Mint with the denomination of **30** drachmas. The diameter of the coin is 34 mm and it weighs 18 grams (figure 16).

Figure 16 – The silver 'Centenary of Greek Royal Dynasty' 30 drachmas coin, Kingdom of Greece, 1963 [Krause No KM 86]

On the obverse, there is a design of the Greek Royal Arms surrounded by portraits of the Royal Dynasty's members. On the reverse, the map of Greece is shown, with the 'Kingdom of Greece' inscription and the denomination value.

The dynasty was established in Greece after King Othon (Otto) was forced to leave the country. The date of 30 March 1863 marks the accession date of **George I** to the throne, who reigned until his assassination in Thessaloniki on 5 March 1913. His son, **Constantine I** took over immediately and reigned until May 1917, after facing an ultimatum by the Allies to abdicate the throne. His second son, **Alexander** took over on 12 June 1917 but he died of a monkey bite on 25 October 1920. After a referendum, Constantine I returned and reigned from December 1920 to September 1922 (after the Minor-Asia catastrophe)[31]. **George II**, Constantine I's other son took over the throne from 1922 to 1924, when the Greek Republic was proclaimed (1925-1935), and from 1935 (restoration of monarchy). Following World War II and the death of his brother George II on 1 April 1947, **Paul** took over the throne. The effigies of the above monarchs on the coin appear in date order from the left, and anti-clockwise.

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[31]   See 'Modern Greek Currency 1927 to 1944', *Australian Numismatist*, 2003.

Politically, Karamanlis's internal policies targeted political enemies, with many escaping abroad[32]. The effective use of internal enforcement bodies for monitoring and interrogating political enemies and supporters reached its climax with the murder of Lambrakis in Thessaloniki on 22 May 1963, a popular member of the Democratic Left Party (Ενιαία Δημοκρατική Αριστερά) and member of the Greek peace movement. This was the catalyst for a massive popular unrest that forced the resignation of the EPE government in June 1963. Subsequently, elections were set for 3 November, which were won by the UCP of George Papandreou, ending Karamanlis's run of eight years.

YEAR 1964

On 4 March 1964, King Paul died and for this year, the aluminium coins of 10 and 20 lepta and the copper-nickel coin of 50 lepta only were struck. Also, from this year, a new set of Greek banknotes was progressively released beginning with the 50 drachmas blue banknote in October. This will be discussed in detail in the second part of this article.

MINTMARKS

King Paul's basic coinage (50 lepta to 5 drachmas) carries a set of two mintmarks located on either side of the denomination. My observations have identified two variations of mintmarks:

(a) 'Horn of plenty' (corne d'abondance) on the left, and a 'wing' on the right. The horn is aligned along the perimeter of the coin and is a mintmark of the Paris Mint. The wing is the privy mark for Lucien Bazor, the Chief Engraver of the Paris mint 1931 – 1958.

(b) 'Horn of plenty' (corne d'abondance) on the left, and an 'Owl' on the right. The horn is aligned perpendicular to the perimeter of the coin. The owl is the privy mark for Raymond Joly, the Chief Engraver of the Paris mint 1958 – 1974.

The first mintmark / privy mark combination appears for coins struck in years 1954 and 1957, and the second appears in years 1959, 1962 and 1964.

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[32] Estimations quantify the escape of over 60 000 members of the Communist Party abroad.

The second combination also appears on the 30 drachmas silver 'Centenary of Royal Dynasty' coin, just under the letter B of the inscription 'Kingdom (ΒΑΣΙΛΕΙΟΝ) of Greece'. The aluminium coins of 5, 10 and 20 lepta carry no mintmark. Also, the nickel 10 drachmas 1959 coin and the silver 20 drachmas 1960 'Selini' coin do not appear to have any mintmarks either.

TECHNICAL SPECIFICATIONS

The following table is a summary of specifications and mintage for all coins discussed in this period:

Unit	5 l	10 l	20 l	50 l	1 dr	2 dr	5 dr	10 dr	20 dr	30 dr
Metal	Aluminium			Copper 75% - Nickel 25%				Ni	Silver 0.835	
Weight (g)	0.85	1.00	1.20	2.30	4.00	6.00	9.05	10.10	7.50	18.00
Diameter (mm)	20	22	24	18	21	24	28	30	26	34
Year	Mintage is in millions									
1954	15	48	24	37.23	24.19	12.61	21	-	-	-
1957	-	-	-	5.11	8.15	10.17	-	-	-	-
1959	-	20	20	10.16	10.18	5	-	20	-	-
1960	-	-	-	-	-	-	-	-	20	-
1962	-	-	-	20.5	20.06	10.10	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	3
1964	-	12	8	20	-	-	-	-	-	-

EPILOGUE

The studied period confirmed the link between inflation and the issuance of similar banknotes in different releases. Further, the political decisions taken by the governments proved again the inability of the Greek politicians to avoid the mistakes made since the War of the Independence. In effect, the nation's political and economic independence was sacrificed for preserving the relationship with her Western Allies and obtaining massive aid. In addition, factors such as the Korean War participation, the bad administration of precious economic funds, the drachma devaluation, the

political and civil persecutions, the migration of many Greeks abroad, and the Royal Palace's consent to the draconian internal policies forced the electorate's alignment towards the central-left. Consequently, the public's choice in late 1963 was really, a question of 'when', rather than a question of 'if'.

As we'll observe in the second part, the popularity of the Papandreou government and its friction with the Royal Palace would force past political enemies to conspire and create instability. Thanks to the political instability in Cyprus since the mid 1950's, the perfect opportunity would be presented a few years later for a military dictatorship to take place. This would mark the beginning of a terrifying period the country has ever faced in its modern history.

Nevertheless, the studied period allowed for a new Greek coinage to reappear for the first time since 1930 and for the Bank of Greece to display a progressive maturity in designing and producing its own high-quality banknotes, especially since 1954.

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