

DEFENSE PROVISIONS IN AUSTRALIA

Historical Record

Chapter 1 - The Early Records, 1882 to 1906.

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Explanation:

The Early Records making up Chapter 1 relate mainly to Small Arms Ammunition and Cartridges, in the course of which there are included the transactions with the Colonial Ammunition Coy. Ltd., and with the Australian Explosives and Chemical Coy. (now I.C.I.A.N.I.). With the supporting papers there are copies of the various agreements (running up to 1910) with the Colonial Ammunition Coy. Ltd.

An Historical Record compiled by J.K. Jensen

INTRODUCTORY

This is to be an historical record of the manufacture of War Material in Australia, but there is more to it than that; just as "mass production" in industry originated in the United States of America during 1798 with the manufacture of firearms for the Government by one Eli Whitney, so it will be shown in this narrative that the development of secondary industry in Australia has been influenced substantially by our Defence policy and the needs of warfare. According to the Oxford Dictionary, the word "material" means "a collective term for the articles, supplies, machinery, etc. used in an army, navy, or business as distinct from the personnel or body of persons employed". For ourselves, we have been accustomed to use the word "munitions" when thinking of the fighting equipment of the Armed Forces, and when it is the clothing or accoutrements of the fighting man or of an animal employed in the Armed Forces, we have been prone to describe such as "personal equipment", or, for short, merely "equipment". As this historical record is to be concerned with the production and procurement of every kind of equipment used by the Armed Forces, and the expression "war material" means every kind of equipment, it would be correct to use that term as signifying our intention, but it will be convenient for my purpose to use the word "munitions" when I am dealing with the production of purely "fighting equipment", and to have an understanding with my reader that when I am dealing with clothing and accoutrements and the like - to all intents they will be comparable with the ordinary products of commerce - they will be designated as "personal equipment". I have a reason for this: by far the greater part of this narrative will be taken up with munitions production, whereas the Government factories manufacturing

The production of munitions of war as they are known today commenced in the thirteenth century following upon the discovery of gunpowder. Up to that time the fighting men had to depend upon the muscular energy of his own body however it may have been employed: by direct blow with the fist, as is so graphically portrayed by the carvings on the Sidonion sarcophagus of 303 B.C. now to be seen at Constantinople; by the sling shot of the Old Testament; by an edged weapon carried in the hand or thrown; by the archer drawing taut his bow; or by the engines of the Romans which became the "Ballista" or the "Trebuchet" of the Middle Ages.

The engineer therefore had the field to himself until the thirteenth century and then the chemist came on the scene; it is recorded that the English alchemist, Friar Roger Bacon, midst his dabbling in potions and magic and charms in the search for the "Philosopher's Stone", hit upon the composition of Gunpowder. Nevertheless the authorities on the subject do not entirely agree that Roger Bacon can be charged with the awful responsibilities that have arisen out of the introduction of lethal weapons to humanity; there has been extensive research into the beginnings of arms and ammunition and it has carried students from China to Roger Bacon, and from Bacon to another monk Bertholdus Schwartz, but with no conclusive result. For himself, the writer of this narrative has hoard expression of a differing viewpoint: he had the duty during the war, of conducting the Chinese Minister to Australia on an inspection of the extensive Maribyrrong explosives factory, and he remarked jocularly to Dr. Shu Mo "It is interesting, Doctor, that the necessity for all this has developed out of the invention of gunpowder in China". The riposte of the Minister was quickly forthcoming:

"Ballista: Stretched with cords and thongs, like a bow, to hurl large stones.

"Yes! But the Chinese invented gunpowder for entertainment; not for killing people!" However, be that as it may, the armourers of the period soon found means of using gunpowder in warfare, and soon the manual engines of war which had served over the centuries were replaced by the deadly instruments now available to ^{man} ~~men~~. According to historical documents, guns were being made in London during 1372 A.D. and there are records also that in 1345 provision was being made for repairs to ships' guns, and for the supply of ammunition, while Froissart states that the English employed 400 cannon at the siege of St. Malo during 1378. Whether the latter were of local or foreign manufacture is uncertain, but it is known that gun casting was in full swing on the Continent before that time. Furthermore the Mamluks in Egypt were using firearms since about 1365, and it is recorded in a book published recently that in 1500 the Mamluk Sultan QANSUE al-GAWRI had cannon cast "at an unprecedented rate" in three tests alone at which he was present, 219 new guns were proved.

As stated, gunpowder was known about a century before there was mention of guns, but it needed the combination of the engineer and the chemist with the military experts - as is the case today even - to develop the use of gunpowder as an agency of offence and defence, and it only became important concurrently with the fabrication of guns. For 700 years therefore, in the production of munitions of war, the place of the chemist has been all important, and it became fundamental about a hundred years ago with the advent of nitro-cellulose explosives. Thus it continued until recent years when the physicist too has become an outstanding factor in warfare. In England, in the course of time, the manufacture of arms and ammunition became centred in the Government arsenals and selected commercial factories, notably the Royal Ordnance

References :

Colony of New South Wales did display interest in munitions production, it was by way of criticism rather than constructive, whereas the Colony of Victoria, from 1882 onwards, was conscious of the necessity for something to be done and showed

it in a practical manner. It was by reason of the fact that at the inauguration of Federation there existed in Victoria a Minister for Defence with the customary civilian Department and trained Naval and Military Forces under his administration; there was also an efficient munitions factory and a competent civilian organisation for purchase of Naval and Military equipment, so that it was almost a matter of course that the first Australian Government built up Commonwealth Defence upon the nucleus already established in that State.

My plan is therefore to trace the development of munitions production in Australia from what I believe to be its initiation in 1882, but preliminary to taking up that story it may be of interest if I mention that there is evidence of a "munitions factory" in being, in the present Victoria, long before the foundation of Australia: on the hill now known as Mount William, about five miles north-east of Lancefield, on the main ridge between the Maribyrnong and Sunday Creeks. Here the local tribe of aborigines had a "factory" for production of stone axe heads and spear points; they even maintained a "sales organisation" whereby disposal of the products to other tribes was arranged by barter. It is a coincidence that ultimately the principal Australian munitions laboratories and factories came to be located on the Maribyrnong river.

A subsequent venture of the kind, in our own time, might also be mentioned here: it was described in the Sydney Morning Herald of 6th March, 1884 as being established at Narrabeen, N.S.W., under the title of "Ingleside Powder Works" the ruins of which are still in existence. A Company known as "The Australasian Powder and Explosives Manufacturing Company" was formed by public subscription, and the promoter, Carl von Bieren, said to be of Dutch-American extraction, announced the

described the processes intended to be employed in the manufacture of nitro-glycerine explosives. The proceedings attracted much public interest at the time, and the Governor of New South Wales (Lord Augustus Loftus) and the Premier (Sir Henry Parkes) attended an inaugural banquet, but whatever the original intentions of von Bieren, the enterprise was terminated with his conviction as a fraudulent bankrupt.

Another matter of historical interest which can be recorded here in full, although only sub-para. 8 is apropos of the narrative, is that in 1889 a Major-General, Sir J. Bevan Edwards was commissioned to investigate the Military Forces and conditions of the Australian Colonies, a separate report to be addressed to each of the Colonial Governments. The Governments received their reports on 9th October, 1889, there being attached to each a memorandum recommending the reorganisation of the forces on a unified basis. The document contained the following proposals -

1. The federation of the forces of all the Australian colonies.
2. The appointment of an imperial officer to advise and inspect in times of peace and to command in war.
3. A uniform system of organisation and armament, and a common Defence Act.
4. The amalgamation of the permanent forces into a fortress corps.
5. A federal military college for the education of officers.
6. The extension of rifle clubs.
7. A uniform gauge for railways.
8. A federal small arms manufactory, gun-wharf and ordnance store.

Although there is nothing in the records I have examined to show that any action specifically was taken upon the recommendations, it is not unlikely that the report may have influenced the thinking of the "Founders" of the Federation,

and certainly all the recommendations, with the exception of (7), have been put into effect at one time or the other - even (7) appears now to have been commenced.

It will be appropriate also to reproduce another example of farsightedness dating back to 1901, an extract from an address by Sir John Colomb, K.C.M.G., M.P., (late Royal Marine Artillery) at a meeting in London of the Royal United Service Institution^M -

.... When you look round the Empire you see enormous natural resources of every sort, and what is wanted - I then declared and declare still - is the organisation of the Empire. We must lay hold of, draw together, and utilise the resources which the enterprise of our fathers secured for us in the Empire. That is the problem. It is not a question of Salisbury Plain or Aldershot; it is the problem of such arrangements as will bring into association the various forces of the Empire, and make useful and available for all the Empire its dormant resources, and to prepare to make active British power when required. The last point is the question of stores, incidentally touched upon by the gallant lecturer. Incidentally it comes up that there were old-pattern guns, and that stores could not be obtained. I do think myself that one of the most important and serious problems of all with regard to the question of military efficiency of the Empire is the question of the production of equipment and distribution of stores. To my mind, it is against all common sense and against all reason that this world-wide State of ours should have to rely upon an island in this part of the Atlantic, and in that island on one or two firms. What we have to do is to make a real beginning in the decentralisation of our productive power of war materiel and war equipment. I say that Australasia is the true base for the creation of those things required to equip our forces in the Pacific, by the gradual development and building up of a system of factories in the other hemisphere. Not merely for the necessities of Australia, but for the Imperial forces, this is desirable. If we were engaged in operations in China, for example, we should not have to send and drag everything from England, but in Australia there should be factories not merely for local wants but for general military purposes. I feel extremely strongly on that point, and I should be very grateful if the gallant lecturer would, in his reply, give us a little more information about the question of stores. I think it would be extremely useful if he would, in his reply, give any information in his possession as to the exact state of facts with regard to equipment and stores in Australia. I desire to know whether I am right or wrong in saying that Australia in one hemisphere has to look to an island in another hemisphere for every single thing connected with the equipment of naval or military forces.

The first appearance of an official interest in the production of Munitions in Australia is a memorandum dated 16th August, 1882, from the office of the Surveyor-General of the Ordnance, War Office, London, forwarding plans and specifications of the Plant and Materials, etc. necessary for the manufacture of Martini-Henry .45" military cartridges. This letter was stated as being in response to an enquiry from Major F.T. Sargood, an officer of the Volunteers in Victoria, Australia, who at the time was on a visit to England. Major Sargood, ^{then} a principal of the well-known softgoods concern, was a man of foresight and imagination, and always was very keenly interested in questions of defence; afterwards he became Minister for Defence and was knighted for his services to the State. It was because of his initiative and drive that Victoria became the most advanced colony in respect of Defence matters, and lead the way in production of munitions in Australia and in the establishment of an Australian Navy.

Apparently Major Sargood was unable to do anything with this information until he had attained to Cabinet rank, but in his ministerial capacity he sent the papers on 30th September, 1884 for the information of the Minister for Public Works with advice of his intention to send copies to "the other Colonial Governments with a view to ascertain the possibility of erecting a central factory". In November, 1885^m, Major Sargood asked the Agent-General for Victoria in London to enquire whether a company making gunpowder could also undertake the production of small arms cartridges, and fuzes and tubes (for gun ammunition). The Company approached replied^m that such products must be handled by a separate company with special management; that one of the companies engaged in such business in England "might be tempted to establish

a factory in the colony for military cartridges if it could secure thereby the sporting cartridge trade of the colony. The supply of military cartridges is relatively so small that a factory could not be maintained, even in this country, if its output were limited to military orders".

The next move appears to have been in April, 1886^M, under cover of a letter from the Secretary of Defence in Victoria (Major-General M.F. Downes) to the Premier, an extract from which reads -

....with reference to the manufacture of small-arm cartridges, fuzes, friction-tubes, and such like. The arguments used to show the importance of a gun-powder factory apply equally to these articles and to New South Wales at least the necessity of such a factory being established will be nothing novel, as the Royal Commission on Defences, held in Sydney in 1881, reported "that steps should be taken to purchase a plant for the purpose of making up small-arm ammunition".

For all supplies we are now dependent on England, and in time of serious war not only should we be unable to procure small-arm ammunition from the War Department, the producing powers of which could not meet their own consumption, but, in all probability, as in the Crimean war, in the Indian mutiny, in the threatened war with Russia last year, all the private manufactories were engaged for the Imperial Government, and supplies could only be obtained from private firms, if at all, at largely increased prices.

In relation to this, General Downes urged that the Premiers of the other Colonies should be approached with a view to all joining in promoting a united effort for a local factory, and that their possible requirements of the ammunition should be ascertained. He pointed out that it would be more advantageous for a factory to be started by a private company having at their command experienced managers and foremen, then to incur the outlay of constructing one and obtaining technical and foremen staff at high salaries. The Premier of Victoria communicated accordingly with all the Premiers, including New Zealand, *and also the administration in F154*, but the replies were unfavourable. The New Zealand Premier gave as a reason that there was already established in that country a small-arm cartridge

*Colon
of Fiji*

Meanwhile various commercial concerns with overseas and Australian connections had been making enquiries, particularly with regard to description and quantities of the requirements, and had been advised suitably, but the only one calling for special note was from Mr. F. Gold, Wire Nail Works, Palmer Street, Richmond, Victoria, dated 1st July, 1886 :

In reference to your able reply to Mr. Wood's enquiry (re the manufacture of cartridges in Victoria) allow me to offer a suggestion that, instead of inviting English workmen to set up a factory here for the above manufacture, why not encourage colonial industry and enterprise.

I am prepared to enter into a contract so supply the Government with any quantity of colonial manufactured cartridges, equal to any imported, at say 25 per cent above the Birmingham prices, providing you offer a sufficient inducement in the shape of monopoly and bonus, to warrant me enlarging my premises and plant.

F. Gold.

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The interesting point about this is that the firm ^{is} still carrying on business in Richmond *at the time of this writing*

For the next two years a considerable amount of correspondence passed between commercial concerns and various agencies of Government, both in Australia and in England, full details of which are contained in the correspondence files and in Victorian Parliamentary printed Papers Nos. 21 of 1886 and 18 of 1888, but most of these have little interest now. A reply to one suggestion, dated 4th August, 1886, indicates the trend of thought of the Defence Department in Victoria at the time :

.... the Government have no intention at present of establishing a factory for the manufacture of warlike material. The Premier in his Budget speech mentioned that he was prepared to give a bonus to any private company which first manufactured a certain amount of rifle ball cartridges of approved quality in the colony.

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establishment of a small-arms ammunition factory in the Colony will at no very distant date become an accomplished fact", and this was reiterated in a reply to a private individual in September, 1886. This optimism was based upon exchanges of correspondence of a practical nature with existing English manufacturers regarding establishment of a branch factory in Victoria with possibility of a £2,500 subsidy from the Government, the provision of cheap land and promises of firm orders. The hope was also expressed that the other Colonies would come in once a factory had been established in Victoria.

A more positive statement of the intentions of the Government of Victoria was contained in a letter of 10th December, 1886, signed by the Secretary for Defence (Major-General M.F. Downes) and addressed to Messrs. Inray and Co. as Attorneys in Australia of G. Kynoch and Co., leading English manufacturers of military small-arms ammunition -

.... I have the honour to inform you that some time since the Premier of this Colony communicated with all the other Australian Colonies for the purpose of obtaining their co-operation in the establishment and support of a rifle cartridge factory. The replies, however, not being altogether satisfactory, this Government determined to take steps for the establishment of one in Victoria.

It is my opinion, if such a factory were established, and in such a central position as Victoria, the ammunition produced being of equally good quantity to the English, and the price reasonable, that sooner or later all the Colonies would gladly avail themselves of its resources.

Under the present state of affairs it is not likely to be very long before the Imperial Government, in preparation for one of its numerous little wars, or to be in readiness for what may occur in Europe, may be drawing so heavily upon the powers of production in England, that the colonial orders will be put aside temporarily. The Colonies will then be only too glad to replenish their supplies from the nearest source available.

As mentioned in my previous letter of the 4th ultimo, our consumption for the past year was :

3,100,000 M.H. ball cartridges
300,000 M.H. blank cartridges
200,000 M.H. carbine cartridges

note

I think I should draw attention to the remarkable foresight of General Downes when he wrote that letter - particularly in the third paragraph. During 1939 and 1940, we received appeals for small-arms ammunition from various sister countries of the Pacific area, and it was from the factory at Footscray, Victoria, ^{established} soon after he wrote the letter, that the supplies were made.

X
X

The next move of importance was a letter, 25th February, 1887, from a Mr. Alexander Davidson, Australian representative of Greenwood and Batley Ltd., Leeds, England; he said his principals would be prepared to form a syndicate for the founding of a factory, but he protested against the plant necessary being subjected to Customs duties and that the bonus offered of £2,500 was insufficient against the possible capital expenditure of £40,000. He also questioned the price suggested by the Government: 25 per cent on Woolwich Arsenal prices, pointing out that labour in Victoria was twice as expensive as in England, and that materials and factory supplies were far more expensive than in England. He argued that the Government should itself establish the factory (obviously so that the plant would be bought from Greenwood and Batley), this bringing forth in reply a positive statement "that the Government have no intention of starting a factory of their own" and that it was not possible to import machinery without a special Act of Parliament.

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final price
at C.

File of Customs duty

After this various English interests continued to express interest in the proposal, mostly by way of effort to extract more favourable terms from Victorian Government, Messrs. Kynoch particularly having submitted a definite proposal that in the event of the Governments of the four principal Colonies participating in a joint loan of £15,000 towards the capital expenditure, ^{coupled with} ~~and in~~ joint orders for 10,000,000 cartridges annually; ~~and~~ ^{with} a grant of a bonus

X

of £10,000 and the free admission of the plant required, they would build and operate a factory at a site to be agreed upon. The reply to this contained the information that the Minister for Defence (Sir James Lorimer) was at the time in England discussing the matter with firms there, and that no further steps would be taken meanwhile in Victoria. This visit brought results in the form of a letter which, in fact, was the origin of the Commonwealth Government small-arms ammunition factory at Footscray, Victoria, the first munitions factory in Australia, and consequently its importance warrants its complete reproduction here -

Sir James Lorimer, K.C.M.G.,
8 Victoria Chambers,
Westminster.

London, S.W.,
21st July, 1887.

Dear Sir,

Referring to the interview I had with you respecting the establishment of a small arms ammunition factory in the Colony of Victoria, I beg respectfully to make the following proposition, and shall be glad if you will lay the same before your Government.

As stated to you at our last meeting, I have been for some time engaged upon the manufacture of cartridges in Auckland for the New Zealand Government, and came to England a short time since to purchase additional machinery, to increase production and prepare for the probable change in small arms. And whilst here have made arrangements with Messrs. Greenwood and Batley, "who make all the Woolwich Cartridge Machinery," and some one or two other gentlemen who have joined me in forming a small private Company for the production of small arms ammunition and possibly, later on, of war stores generally.

Seeing that the Australian Colonies are desirous also of establishing a factory for supply of S.A. ammunition, our Company would be prepared to start a factory in Colony of Victoria, if we could receive the support of the Government.

BE GLAD UPON MY

APPROACHING RETURN
TO NEW ZEALAND
TO GO OVER TO
MELBOURNE AND
TREAT WITH YOU
PERSONALLY ON
THE SUBJECT.

What we should ask would be, first, a subsidy from Government, which, considering the costliness of the machinery required and its installation, should not be less than £5000.

A site in favourable position for all Colonies, and from Military point of view; with favourable terms for the introduction into Colony of plant and necessary material and contract for, say, ten years.

is likely to be

I am taking out all new plant of latest inventions and expect to have it working before next year.

I am,
Dear Sir,
Yours faithfully,
(Sgd.) JOHN WHITNEY.

er. his on age ?

Captain Whitney had already established a factory in New Zealand for manufacture of small-arm and sporting cartridges and thus his proposal was founded on experience. That the proposal was received favourably by the Victorian Government is evident from a letter dated 22nd September, 1887, to the Premier of Queensland, (Hon. S.W. Griffith, first Chief Justice of the High Court of Australia), wherein the Victorian Premier (Hon. Duncan Gillies) said that the Minister for Defence regarded it as preferable to other proposals from English concerns. In February 1888, from New Zealand, Captain Whitney submitted more explicit proposals, to which the Government responded, some three weeks later with practically an acceptance, and a suggestion that he should come to Melbourne and select a site for the works. In his letter, Captain Whitney said that his Company would consist of Messrs. Whitney and Sons; Messrs. Greenwood and Batley of Leeds, England; Mr. T.W. Cartwright, Solicitor, of Nottingham, England; ~~the~~ Messrs. ^{and B. Wray} Hall, of Mount Morgan, ^{Queensland} ~~Queensland~~; ^{Mr.} J. Clarke; and ~~Mr. Clarke~~ and Captain de Lusada, R.N.; and that the Contract would provide for supply annually of 3,000,000 or more cartridges for 25 years; a site on the Saltwater River (Maribyrnong River, Footscray, Victoria); powder to be supplied by the Government on repayment; a bonus of £5,000 plus £2,000 as an allowance for Customs duties; and that the price of cartridges would be based upon current prices abroad plus carriage, insurance, etc. It was also asked that the Victorian Government should endeavour to induce the New South Wales Government to join in purchasing their require-

It will be recollected, with regard to the last stated request, that mention has been made already in this narrative of correspondence with the various Colonial Governments as to their participation in some form or other with the proposals for a small-arms ammunition factory, and copies of Captain Whitney's letter of July, 1887, were sent in September of that year to the Premiers of New South Wales and Queensland. In March, 1888, a further communication was sent to the Premier of New South Wales, ^{Sir Henry Parkes,} covering Captain Whitney's letter of 12th February, 1888, and asking whether the Government of New South Wales would give its support to the proposal in the terms of Captain Whitney's final suggestion. There was ground for optimism in putting forward this enquiry inasmuch as Captain Whitney's earlier proposals had been discussed personally during the previous September with Sir Henry Parkes, ^{Premier of New South Wales,} by ~~Sir James Leaning~~, ^{Sir James Leaning,} Victorian Minister for Defence, and ^{he} had formed the opinion then that Sir Henry Parkes had "very favourably entertained the idea of establishing a federal factory for the manufacture of rifle ball cartridges". The enquiry brought what might be described as a characteristic response, and also some discussion as to the locality in which the factory would be placed; in fact, questions on this latter point had already been made publicly some months previously, when the local Parliamentary representative, Mr. James Shackell, had urged Echuca, on the River Murray, for consideration by the Government. In passing, the aspirations of Echuca for a Government factory were gratified ultimately, as I will show in due course, but it had a long wait: until 1942; however, I can say here when the decision for the latter was made, the representations which had been made by Mr. Shackell in September, 1887, were ^{still} in my mind. X
STIL

In acknowledging the communication recorded

I regret to say that I do not see how this Government

can accord its support on Federal grounds to a factory of this character already decided to be established on Saltwater Creek, which would be more correctly described as subsidizing a Victorian factory than as assisting to establishing a Federal one.

The reply of the Premier of Victoria (Mr. Duncan Gillies) was to the effect that in submitting the proposal, his Government was not contemplating any financial assistance on the part of the New South Wales Government, but "only that you should so far co-operate in the undertaking as to procure your supply of cartridges from Mr. Whitney's factory". Mr. Gillies also suggested that if the Government of New South Wales could agree with Mr. Whitney for the transfer of the whole project to a site near Sydney, inclusive of the financial arrangements, etc., Victoria would be just as willing to co-operate by procuring its requirements from a Sydney factory.

Mr. Gillies next wrote advising Sir Henry Parkes that Mr. Whitney would call upon him for discussion of the suggestion for a New South Wales site for the proposed Federal factory, and the results of this are summarised in a letter from Sir Henry Parkes dated 14th May, 1888 :

I have seen Mr. Whitney several times, and have placed at his disposal an officer of the Survey Department to assist him in selecting a site; but Mr. Whitney puts forth one condition, which I am bound to say I do not fully appreciate, namely, the necessity of the close proximity of a dense population to supply "junior hands" for his manufactory.

NOT BE A FEDERAL FACTORY AND MIGHT RESULT IN THE ESTABLISHMENT AT AN EARLY DATE OF A SECOND AND COMPETING FACTORY IN SYDNEY

Sir Henry Parkes went on to suggest that instead of either Sydney or Melbourne as the locality for the factory, it should be placed at a "conterminous point of the three colonies of South Australia, Victoria, and New South Wales, or, if this is not practicable, at some eligible place - Albury or Echuca, for example - on the River Murray".

He said that in such event he would recommend to Parliament that New South Wales should take a full share in the venture.

...ent on with Mr. Whitney's proposal it could

A comment which is apropos at this stage is that there is nothing in the records that will disclose the reason for the summary dismissal by Sir Henry Parkes of Mr. Whitney's objections to a locality distant from "a dense population"; it is obvious from this that Mr. Whitney was agreeable to a site near Sydney, but apparently this was not acceptable to the New South Wales Government. Furthermore, there appears to have been no enquiry by Sir Henry Parkes as to the moaning and the necessity for "junior hands" which in fact was the crux of the business; even in these days of modern manufacturing plant there is a considerable requirement of female labour for attendance upon the automatic and semi-automatic machines usually employed in production of small arms ammunition; it will be obvious therefore that Sydney and Melbourne were the only possible districts for location of a factory.

Nevertheless the records show that the municipalities of the Murray Valley were not lacking in the enterprise still manifest in their successors of the 20th Century; there were continued representations from Echuca and Wodonga on the Victorian border, and from Wentworth and Moama on the New South Wales side, and Greenwood and Batley took a part in the pressures being applied by sending out to the Centennial International Exhibition of 1888 at Melbourne, a working exhibit by which the taxpayer could see for himself that it was a simple process to produce rapidly large quantities of metal components of ~~small~~ rifle ~~ammunition~~ ammunition. (An extract from the Melbourne "Argus" of 30th October 1888 will be found in the correspondence accompanying this narrative.)

In the course of discussion upon the proposal, Captain Whitney disclosed that apart from the question of labour supply, he was also opposed to any locality outside a capital city because it would require an additional capital expenditure ~~of £20,000~~ of £20,000 to offset costs relative to access to raw materials and supplies; and the extra costs of transport, and by way of bringing all these points to a conclusive determination, the New South Wales Government was asked in June 1888 whether it would contribute an additional £10,000 to the previously discussed capital subsidy ~~of £10,000~~ for a joint Federal factory to be located on the River Murray. However, there are no papers available to show whether a reply was received to this, or whether any other consideration was given to participation by New South Wales.

double spacing

carry on

THE SEQUENCE OF EVENTS IN REGARD TO THE
accepted plan commences with a certificate by the Registrar
of Joint Stock Companies in England that, "the COLONIAL
AMMUNITION COMPANY LIMITED was incorporated under the
Companies Acts 1862 to 1886 as a Limited Company on the
Thirtieth day of January one thousand eight hundred and
eighty-eight". On 22nd May, 1888, Captain Whitney
submitted a plan of the site at Footscray, Victoria, of
the proposed ammunition factory and testing range. He
asked for a grant of three acres of land for the present
and the option of purchase of 30 to 50 acres in consider-
ation of future requirements; for a bonus of £5,000, and
a contract whereby the Government would purchase all
future requirements of munitions of war from the Company.
The price of the cartridges was not to exceed English
prices plus landing charges, and various other accessory
details were specified such as provision of magazines,
supply of gunpowder, testing range for Government inspection,
etc. Delivery of the product was to be within twelve
months or less. About this time the Governments of
South Australia and Tasmania also expressed their willing-
ness to support the scheme with orders for their require-
ments of ammunition.

38/2545

By September, 1888, a printed draft of the
agreement with the Company had been prepared by the Crown
Solicitor, but some time had to elapse before it could become
effective. It was not until May of 1889 that all the
formalities were completed in Australia and the indenture^m
was signed by the Governor-in-Council. It provided for a
lease of five acres of land at Footscray, Victoria, to the
Company for 999 years at a peppercorn lease, and also set
the terms of the contract for supply of ammunition during
the ensuing 25 years and the price to be paid. It provided
also that the Company should be paid £5,000 as an inducement
The indenture was then

sent to England for signature by the Directors of the Company, and on 2nd August, 1889, the Agent-General for Victoria wrote that that had been done on the previous day and that the signatories were :

W.T. Cartwright, Solicitor of Nottingham (Chairman of the Company)
Arthur Greenwood of Greenwood and Batley Ltd., Leeds (manufacturers of the plant installed in the factory).

As a matter of interest, it can be mentioned here that in December, 1918, I met Mr. W.T. Cartwright in London, and during 1919 I visited the Greenwood and Batley works at Leeds. During World War I, Mr. Cartwright's sons were in charge of the Australian factory for the Company : Mr. George Cartwright as Manager, and Mr. A.J. Cartwright as Assistant Manager.

The next move was dated 8th August, 1889 : a letter to the Minister for Defence from the Company at Leeds advising that Mr. Asa Whitney was leaving for Melbourne to supervise erection of the factory. A lay-out plan of the proposed factory was enclosed with the letter. Meanwhile, in Victoria, a printed copy of the indenture was presented to the Parliamentⁿ, and then, on 4th November, 1889, Parliament formally ratified the indenture. This is evidence of the practical manner in which Victoria addressed itself to questions of an effective Defence policy and it is interesting in this connection to note that in the Census of 1881, the population of the Colony was only 861,566 persons (New South Wales : 749,825), and in 1891 only 1,140,038 persons (New South Wales : 1,127,137 persons), and to consider that by the latter year this small population had been so conscious of its responsibilities as to take up the manufacture of military ammunition.

The Act prescribed that deliveries of ammunition manufactured at the factory should commence within twelve months - that would be 4th November 1 and there is evidence that this obligation must have been fulfilled

interest →

satisfactorily, in that the Melbourne "Age" of 14th June 1891 records approval by the Executive Council of payment to the Company of a bonus amounting ~~to £5,000~~ to £5,000, as provided in the Indenture. In October 1892,

a Deputation of employees waited upon the Minister for Defence (Sir Frederick Sargood) relative to a cessation of operations at the Factory in consequence of 1,000,000 rounds of ammunition ~~being~~ ordered from England some time previously. The details of interest from the historical standpoint are that the papers disclose the figures of employment to be 140 people, of which 120 were females on piecework rates, and that the wages ranged from 8/- to 25/- weekly. There was also

~~was~~ a reflex in the statements by some of the ex-employees at the deputation present of the current economic condition of the country - all the banks closed their doors shortly afterwards - the domestic circumstances of the speakers as recorded were :

supported grandparents and self (16/- weekly)

with sister supported family of seven - (10/- and
father cripple, mother dishwashing 12/- weekly)
occasionally

supported parents and three little sisters (10/- weekly)

paid 8/- weekly for own board and 5/- (15/- weekly)
for little sister

supported four brothers - occasionally (16/- and
family got stone-breaking from Town 17/- weekly)
Council

only one working in family, parents and (12/- weekly)
six children to keep

Incidentally, there was an aftermath to the order placed in England for 1,000,000 cartridges, in that a further agreement was entered into with the Company in December 1893 whereby it received £1,450 by way of compensation for the loss of the order, and the Government contracted to place orders of 1½ million cartridges annually for 5 years or in default to make cash payments to the Company. Opportunity was also taken to include in this supplementary agreement to clarify various clauses of the indenture of 28th May 1889 which had been the subject of disputation between the Company and the Government as to meaning and intentions.

For some years following 1893, matters at the factory were of a ~~violent~~ violently disturbed in

FOR SOME YEARS FOLLOWING 1893, MATTERS AT THE FACTORY WERE OF A ROUTINE NATURE, BUT THIS HAPPY CONDITION WAS VIOLENTLY DISTURBED IN SEPTEMBER 1987 BY AN ~~EXPLOSION~~ EXPLOSION WHEREBY REGRETTABLY THREE OF THE FEMALE EMPLOYEES DIED.

(Bottom para)

attached to the Department of Trade and Customs of the Colony of Victoria, a Fellow of the Institute of Chemistry in Great Britain;

21

23/10/12

The papers disclose that Mr. C. Napier Hake, Chief Inspector of Explosives, made an exhaustive professional investigation, and a Coronial Enquiry was held, from which it was obvious that the Colonial Ammunition Company Ltd. was somewhat lax with the safety precautions, notwithstanding that in December, 1893, Regulations had been gazetted by way of provision for safety in handling explosives at the factory. The verdict of the jury was inconclusive but it resulted in a strengthening of supervision by the Government Explosives Department.

During the last decade of the 19th Century intensive research was being carried on amongst the Great Powers in regard to the substitution of "smokeless powders" for gunpowder, and in the United Kingdom it resulted ultimately in the adoption of "Cordite". It had to be a spun-out process because any supersession of gunpowder as a propellant for military ammunition would involve changes in ballistics, and the weapons had to be re-designed also. For example the range of the weapon and the striking power of the projectile were greatly increased by the introduction of Cordite, and consequently the explosives chamber and the barrel had to be strengthened. In England, the change resulted in reduction of the diameter of the projectile (the bullet) from .45 inch to .303 inch, but with minor alterations the existing loading and firing mechanism (popularly known as the Martini Breech action) was continued; actually, for a single-loading rifle, ^{that} it was the best probably which had ever been devised. There was another consideration too: that in the change-over, only the Martini-Henry barrels need be replaced, but in practice it worked out that the manufacture outright of Martini-Enfield .303" rifles (as the new combination was designated) was preferable, and probably cheaper than conversion of the old .45" rifles, but it did promote study of the possibilities of "magazine" types of shoulder weapons, and their introduction ultimately.

The first mention of manufacture of Cordite in Australia appears to have been soon after the United Kingdom adopted cordite, as disclosed in the following letter:

Secretary of Defence, Victoria, to Secretary
Trade and Customs. 17/12/1895

The Agent-General has represented that some difficulty is likely to arise in obtaining supplies of R.F.G.² powder from Home, in ^{of} the fact that the War Office has adopted Cordite for Small Arms.

Further, R.F.G.² is a powder requiring special care in manufacture and, as it was made in large quantities by all the large firms up to 3 or 4 years ago, the small details of manufacture in each process were well known to

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1359

(White)

... NOW THAT there is little demand for it the workmen have more or less got out of the way of making this special class of powder.

In view of the very great importance of securing a sufficient supply of powder or of cordite for the defence of the Colony the Minister will be glad if the Inspector of Explosives can be asked to make a full report :-

1. As to what steps can be taken to secure a local supply of R.F.G.2 powder.
2. As to the practicability of establishing a Cordite Factory and what steps might be taken with estimate of cost providing for the manufacture of Cordite.

The letter is of particular interest to me in that it is in the handwriting of Mr. F. Savage, under whom, in 1900, I commenced duty in the Ordnance Stores office. By that time Mr. Savage had become Controller of the Ordnance Stores, but the letter was signed by Commander Robert Collins, R.N. (retd), and I am inclined to give him the initiative and drive which resulted, in 1908, in the establishment of the manufacture of military explosives in Australia. It is a fact nevertheless that Mr. Savage contributed materially to my own part in Australian munitions production.

The response to the foregoing letter brought forth a report by the Chief Inspector of Explosives, ~~attached to the Department of Trade and Customs of the Colony of Victoria; Mr. C. Napier Hake, a Fellow of the Institute of Chemistry in Great Britain;~~ it resulted in him becoming scientific adviser to the Defence Department of Victoria, and subsequently the Commonwealth Department of Defence, on technical matters associated with the production of military ammunition, until in 1906 he joined the Department officially as "Chemical Adviser". Mr. Hake was an interesting personality, of a type not to be found nowadays; indubitably of considerable attainments, of a bearing dignified and impressive, and of manners refined and gentlemanly; I had the pleasure of contacts with him

some ten years later, and it was always puzzling to me that a man of his qualities should have been content with a modest civil service appointment in Victoria, at the antipodes of his own country, when all Europe must have been open to him.

Mr. Hake reported in January 1896 that there were uncertainties in regard to future supplies of gunpowder from England owing to the adoption of smokeless powder and the consequent decline of manufacturing capacity, and that even if production were continued upon a reduced scale the quality would be unreliable and in fact had already shown signs of deterioration. He discussed the possibilities of Australian manufacture of gunpowder and advised against it on technical and economic grounds. In a long memorandum he discussed the types and qualities of the various explosives which were superseding gunpowder for military purposes and adduced reasons why only "cordite" developed by the United Kingdom Government, and "Ballistite" developed by the Nobel concern should be considered. He also discussed the possibility of local manufacture of cordite; he considered it practicable but it could only be done economically in association with the manufacture of commercial explosives of the same general composition, as to which he mentioned that the Australian Explosives and Chemical Company was already operating a small factory outside Melbourne for production of blasting explosives of a nitro-glycerine base. Commander Collins, Secretary for Defence, submitted the report for the consideration of the Premier of Victoria, pointing out that there was to be a meeting on 29th January 1896 in Sydney of the various Colonial Military Commandants, at the suggestion of the Government of New South Wales, "to consider what pattern of small arm should be accepted", and pointing out that there should be no decision about the pattern of rifle until there had been discussions first about the type of

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letter No. 80
of 22/1/1896

EXPLOSIVE TO BE USED AND WHETHER IT WOULD BE MANUFACTURED
in Australia. He referred the Conference to Mr. Hake's
report, particularly as to the unreliability of future
gunpowder supplies, and suggested consideration should be
given to manufacture of cordite in Australia. Subsequent
papers disclose that a resolution was passed at the Military
Conference: "That the establishment of a cordite factory in
Australia is a matter of urgent importance".

On 20th March 1896, the Premier of Victoria
received a letter from Mr. Asa Whitney of the Colonial
Ammunition Company Ltd. advising him of information received
from the Directors in England to the effect that the New
South Wales Government was making enquiries in England as to
a factory for manufacture of Cordite and of Small Arms
Ammunition to be located in Sydney and pointing out that it
would be scarcely feasible for the Ammunition Factory in
Victoria to draw its explosive requirement from Sydney and that
anyhow it was questionable whether there was a field for one
ammunition factory in Australia, let alone the second one now
being discussed in New South Wales. Captain Collins suggested
representations to the Government of New South Wales, and that
the Colony might be advised that the Victorian Government
favoured a cordite factory being associated with a commercial
explosives factory. Similar representations on the subject
were also being made in England by the Colonial Ammunition
Company. On 14th April, Commander Collins recommended that
Mr. Hake should be sent to England to make full enquiries
into the matter of adoption of a smokeless powder by the
Victorian Government and the question of a factory in
Australia. Meanwhile, in England, Nobel's Explosives Company
Ltd, dated 25th March, ¹⁸⁹⁶ advised the Agent-General for Victoria
of their willingness to establish a Cordite Factory in
Australia, and in stating that the cost would exceed £60,000
they dwelt upon the difficulties in manufacture that would be

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to undertake the manufacture. An interesting fact disclosed by the correspondence was that in pursuance of their ownership of the Nobel patents of 1888 they claimed that the development of Cordite by the British Government was an infringement, but on the matter being brought to court, the House of Lords ultimately declared no infringement as respects Cordite, but that on the other hand the Nobel Company's patent for Ballistite was valid. Mr. Hake left for England on 23rd May, his instructions being to enquire into the manufacture and examination of smokeless powders and obtain all information that would affect the question of an Australian factory. He was informed that no steps for establishment of such factory would be taken except in conjunction with the other Colonies; that a Government factory was not contemplated; and that a factory set up by a strong commercial concern to be in conjunction with manufacture of commercial explosives would be favoured. He was told also that no subsidy was contemplated, but only an agreement by the Colonies to take their supplies from the factory.

Copies of the foregoing correspondence were sent to the adjoining Colonies and the characteristic note of dissonance on the part of New South Wales duly appears in the files. The Military Commandant, Major-General G.A. French, CMG, RA, pointed out that there were no Small Arms or Artillery in Australia adapted for use of Cordite; that if the Martini-Henry rifles in the colony were to be adapted, these anyhow must become obsolete, so that considerable cost would be incurred to very little advantage; and that there were difficulties and dangers associated with the manufacture of Cordite which so far had deterred manufacture in India. It will be interesting to consider here the viewpoint of the respective Colonies thus disclosed.

Victoria was concerned about the quality as well as of gunpowder from the standpoint of quality as well as of economics, and that as this falling off was due to the obsolescence of gunpowder and the adoption of smokeless powder, the weapons using gunpowder must become obsolete and be replaced by weapons designed to make the most effective use of Cordite.

In short, Victoria was exercising foresight by making enquiries so that supplies of Cordite would be available if and when needed for the defence of the Colony.

New South Wales argued that as it had no weapons other than those using gunpowder nothing should be done. The Colony saw that the Martini-Henry rifles were obsolescent but it advised against making enquiries about the ammunition that ultimately must replace the Martini-Henry (gunpowder) ammunition. In short, New South Wales was for doing nothing.

96/1658
General French's report was sent for perusal by the Military Commandant of Victoria, Sir Charles Holled Smith, and his Staff Officer for Artillery:

Alus-
Lt-Col. E. Bingham, R.A. commented as follows:

With reference to a Colonial supply of Cordite I would beg to point out as follows.

1. Guns fired at night with powder completely do away with the value of electric beams or search lights,
2. No more black powder ammunition is to be issued at home for Q.F. or Machine Guns.
3. I would strongly urge that pending the decision of the Colonial Governments as to a Colonial supply of cordite that 50 rounds per Q.F. gun and 500 rounds per barrel of Machine guns be ordered from England.
4. That no more black powder ammunition be ordered for these guns.
5. That the present existing supply of black powder for these guns be used up at practice.
6. That enquiries be made at home as to cordite charges for 6" B. L. guns and upwards.
7. I understood at home that all "difficulties and dangers of the manufacture in India" had been got over.
8. From my knowledge of the manufacture of cordite I conceive that this climate would be most suitable for the production of the article up to the proper specification.
9. The broad principle of the local supply of ammunition should be kept in view-Cordite being the ammunition of the future, the Colonies should not have to depend on a distant source of hostilities.

I report this as full as an example of the constructive
thought and steadiness of approach typical of Victorian
Defence administration as I found it there in 1900. I never
had personal contact with Colonel Bingham, but today, whenever
I read "Colonel Blimp" in print, I visualise "E. Bingham,
Colonel R.A." as he always signed signed papers. He was of
somewhat burly figure but carried himself well and had
dignified appearance with striking features; very red face
and flowing, light grey moustache; protruding fierce eyes,
bristling grey eyebrows and strong grey hair; obviously he
must have served for some time in India. But he was not
what we think of as a "Blimp", even as a youth I could see
that he was the most competent officer at Victoria Barracks.
He retired at the time ~~1902~~ ^{being} the Commonwealth Military Forces
were organised under the one Command in 1902. Copies of
Colonel Bingham's report were sent to New South Wales and
General French expressed concurrence generally with what he
said and merely explained that the Indian Government had not
commenced manufacture when he (General French) had left India
in the previous April. General French did advise, however,
that if cordite was to be made in Australia it should be by
the Government and not by contract.

In December 1896, a meeting of the Military Commandants of
the Colonies was held in Melbourne and passed a resolution -

The Conference are of opinion it is desirable that
Federal action should be taken for making Cordite
in Australia under Government supervision, and for
the manufacture of gun and small arm ammunition,
and they are further of opinion that until such a
factory is established the defence of Australia
is not in a safe and satisfactory condition.

But it was not until 1908, twelve years later that practical
steps in that direction were ~~taken~~ ^{initiated}.

Mr. Hake handed in his report on 3rd February
1897. He said that his enquiries in England had confirmed
his previous advices and recommendations to the Government.
He described the qualities and purposes of the various types

advocated in Europe and the technical details of manufacture and useful life; he was satisfied that "Cordite" was the best of the various types being manufactured and that there was nothing to hinder cordite being made in Victoria from the standpoint of practicability or of climate. He ascertained also that whatever the difficulties then being experienced in the manufacture or use of cordite, there was confidence that they could be overcome. He said -

It would thus appear that there are two ways of placing this colony in a position of greater security in regard to its supply of ammunition. - Firstly, by the establishment of a Factory in some part of Australia from which supplies could be drawn for the whole of the colonies. Secondly, by filling the magazines with quantities of explosives sufficient to last over a number of years.

He indicated that he favoured the first course, but that before positive steps were taken the British Government should be asked for an authoritative opinion as to the probability of cordite being permanently retained as the Government Service powder. Action in the latter regard was taken and copies of the report were sent to all the Colonies and New Zealand but there was little of encouragement other than bare acknowledgement in the replies. No other action appears to have been taken directly in governmental circles as a result of Mr. Hake's report but interest in an Australian cordite factory was still being taken by commercial interests and occasionally "follow-up" letters were received. The most important of these was a notification in January 1897 by Nobel's Explosives Company Ltd. that Nobel-Dynamite Trust Limited had purchased the Australian Explosives and Chemical Company Ltd. of Deer Park, Melbourne. The explanation given was that as their company was the largest supplier of commercial explosives in Australia (by importation) and desired also to place themselves in the position to make cordite if desired by the Government they had decided to set up a factory

in Australia to manufacture for the Australian market and be in position to add plant to that factory should the cordite project become a possibility, whereas the existing company produced no more than 20 per cent of the trade. They went on -

While we desired to consolidate our hold on the trade and goodwill of the Australasian colonies we did not wish to crush the factory already existing there, and we therefore came to the arrangement already mentioned, by which we secure the advantage of an already licensed factory area of considerable extent, while they secure the active assistance and co-operation of the largest and most successful explosives concern in the world.

It was also stated that the Australian Explosives and Chemical Company Limited would continue to trade in that name.

303 INCH AND THE 303 INCH CARTRIDGE

(No. 10)

relating to the manufacture of ammunition and explosives for the greater part of 1897, probably because the Colonial Governments were pre-occupied with the preliminaries of Federation. The Colonial Ammunition Company continued however to press its proposals, and in a letter dated 9th April offered also to include the manufacture of Cordite along with its proposal to add the manufacture of .303" ammunition to its existing factory at Footscray, Victoria.

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Def 97/3219

Def 98/207

Def 97/3105

This was followed up by another letter on 26th November and Mr. Sidney Batley arrived in Australia in January, 1898, to advance in person that Company's interests. There arrived in Australia also the General Manager of Nobel's Explosives Coy. Ltd., Mr. Thomas Johnston, on the same business; apparently he interviewed the Premiers and the Military Commandants of all the Colonies but there is no record of anything practical emerging.

In October, 1897, Major-General French appeared on the scene again, in a letter to the Principal Under Secretary. He suggested that as the supply of small-arms ammunition was so unsatisfactory it must in the near future be manufactured by the Government, and that enquiries to that end should be put in hand. He urged that if the Colonial Ammunition Company in Victoria could make it at a profit, surely a Government factory in New South Wales could do likewise; that a site with magazines and laboratory buildings were available at Goat Island. He advanced the argument "as the work of making ammunition is largely done by boys, doubtless we could utilise the services of selected boys from the 'Sobraon'." The 'Sobraon' was a training ship used for the accommodation of boys who had been in trouble in a minor degree or who were likely to be in trouble if they were not taken in hand. I do not know whether a

Command
OFFICE
N.S.W.
MILITARY
FOR

Major General
A. FRENCH
C.M.G. R.A.
Commanding
13th Military
Battalion

be entrusted to irresponsible boys. It was only a few weeks previous to this suggestion that three girls had been killed at work in the Victorian factory. Another interesting letter was sent forward to the Premier of New South Wales (Hon. G.H. Reid) on 24th January, 1898 by General French -

In case the Agent of the Colonial Ammunition Company or others wish to get at you in the matter of contracting for small-arm ammunition from private firms, I send you an extract from the report of the Comdt. in New Zealand and an extract of my own.

I am clearly of opinion that with a new rifle and cordite ammunition it is time for us to start the manufacture of our own ammunition, and I have already shown how this may be efficiently and economically carried out in New South Wales.

I would therefore strongly urge that this Colony should not be tied in the future, as it has been in the past, and which has led to a state of affairs in our ammunition supply that has provoked much unfavourable comment of late in the press.

If any important questions of Defence are likely to come up during the Conference, I think Sir Charles Smith and myself should have an opportunity of giving our opinions, I am prepared to start at any moment, but would prefer some notice so as not to clash with my Inspections.

Apparently Mr. Reid was to attend the Premier's Conference in Melbourne, and this was sent to him probably so that he would not commit the Government if approached by Mr. Batley.

On 7th to 10th March, 1898, a Premier's Conference was held in Melbourne, and the Minutes of Proceedings record that at a preliminary discussion, the Military Commandants of New South Wales, Victoria and Queensland, were instructed to interview representatives of the Colonial Ammunition Company and Nobel's Explosives Company, and that the Commandants should also prepare a rough estimate of cost of establishing a Government factory. On 10th March General French presented to the Conference a memorandum of Notes they had obtained to the effect -

Mr. Hake said that Australian Explosives Coy. was manufacturing nitro-glycerine, which contained ingredients similar to Cordite, at rates competing successfully with English and Foreign manufacturers.

Comment

WAS OBTAINABLE
IN AUSTRALIA
AND ALSO
THAT REFRIGERATION
WOULD PROBABLY BE
NECESSARY IN THE
PROCESSES OF
MANUFACTURE

X

Mr. Batley supplied the rates per 1000 at which his company would be prepared to supply .303" cartridges, and also the estimated expenditure on establishing -

Machinery and plant for manufacture of .303" ammunition - £25,000

Buildings and plant for Cordite production - £70,000

Buildings and plant for Rolling cartridge metal with power plant - £15,000

Commander Collins said that the prices of Cordite were -

At Waltham Abbey Royal Gunpowder factory, England - 1/7³/₄d. per lb.

The same delivered in Victoria - 2/6d. per lb.

and that Greenwood and Batley in England paid 3/6d. per lb. to the National Explosives Company for their requirements of Cordite.

General French, in submitting the foregoing to the ^ePremiers, X reiterated the recommendation of the Conference of Military Commandants held at Melbourne in 1896 -

The Conference are of opinion it is desirable that Federal action should be taken for making Cordite in Australia under Government supervision, and for the manufacture of gun and small-arm ammunition; and they are further of opinion that until such factory is established, the defence of Australia is not in a safe and satisfactory condition.

After consideration of the foregoing report, hearing the Commandants and also Captain Collins and Mr. Batley, the Premiers decided -

That if the Government of Victoria does not elect within three months to establish a Government Small Arms Ammunition Factory, then the Government of N.S.W. may hold itself at liberty to establish such a factory in that colony for the manufacture of ammunition from Cordite.

The Colonies undertake to favourably consider the question of taking supplies from the Government Factory, if established, with the reservation, on the part of Victoria, that if the factory be in New South Wales, the Victorian Government, having an agreement with the C.A.C. for the next 16 years, cannot make any arrangement for taking supplies from the N.S.W. factory.

Meanwhile Mr. Batley was busy in the preparation and issue

THAT THE SUBJECT MATTER OF THE PARAGRAPH INFLUENCED OF A PRINTED MEMORANDUM SETTING OUT THE CASE FOR HIS COMPANY

and contesting adverse criticism of the ammunition being made

14/3/98

events, it is unnecessary to detail its contents here, but a copy is filed with the papers. Mr. Batley was successful however in concluding the draft of a new agreement with the Government of Victoria, to come into effect on 1st July, 1898, whereby .303" ammunition loaded with cordite, and any other kind of small-arms ammunition which was required for military purposes would be included within the Company's contract, that reserved stocks of materials other than cordite would be held by the Company and that the Government would undertake to supply cordite to the company from stocks it would hold. The new agreement also provided for revised methods of determining the prices to be paid to the Company for the ammunition ordered.

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Paper
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In April, 1898, commenting upon the resolution of the Premier's Conference of 10th March, Commander Collins submitted a long memorandum in which he expressed opposition to the idea of a Government Factory and favoured support by the Government of the Colonial Ammunition Company. His points were -

- (1) The total requirement of the Australian Military Forces was about 4,000,000 cartridges annually, barely sufficient to keep one small factory at work, whereas the designed capacity of the existing Footscray works was 8,000,000 annually.

The metal required for 4,000,000 cartridges could be rolled in a week therefore the establishment of a rolling mill could not be justified.

- (2) The Victorian Defence Department considers, and the British authorities agree, that a well-known manufacturing firm should be encouraged to produce .303" ammunition, and thereby relieve the Government of the initiatory risks to be expected when the Government itself undertakes manufacture.

- (3) The foregoing was what the Victorian Government did when it encouraged the Colonial Ammunition Company to set up a factory in Victoria. The other Colonies had promised support to the Company but they had not sent forward regular orders. For some reason they have preferred solid drawn .45" ammunition although the United Kingdom have used rolled cases for some time and Victoria had found the rolled case quite satisfactory

As .303" cartridges were now approved for adoption, the Colonial Ammunition Company has intimated its willingness to set up all the plant necessary for manufacture of .303" ammunition at Footscray, and would also instal a rolling mill; the latter would be used for commercial work as well as Government orders.

- (4) Referring to the Government factory proposed by New South Wales, orders could not be expected from Victoria for the next 16 years because it was bound to the Colonial Ammunition Company for that period. A factory in New South Wales lacking Victorian orders would be costly to operate.
- (5) It seems unwise, if not absurd, to have two factories where there is barely enough work to keep one going.
- (6) With regard to Cordite, Commander Collins said that a Government factory at present would be inadvisable seeing that the total annual requirement for .303" ammunition would be 10 tons or thereabouts per annum whereas at the English Government factory the production was 23½ tons weekly. He stated, however, that as the Australian Explosives and Chemical Factory was now making nitro-glycerine at their Braybrook factory, the proprietors (the Nobel Company) would be prepared to extend those works to make cordite for the Colonial Ammunition Company.

Commander Collins also discussed strategic considerations in terms which were quite in accord with what was being said during World War II by myself. As he was my departmental ^{Chief} ~~Head~~ in 1900, it was pleasing to me to discover that I had thus maintained continuity of thought which after all was only the obvious. The memorandum was more important than could have been imagined at the time; it was in effect a statement of policy which stood for the ensuing ten years; after Federation, Commander Collins was appointed to be Permanent Head of the Commonwealth Department of Defence, and the only variation from the policy here enunciated was the decision in 1908 to set up a Government Cordite factory.

Another proposal of 1898 also saw fulfillment in the course of time but it took much longer. In August of that year, the Colonial Ammunition Company offered to sell their property to the Government for £60,000 cash or in bonds, or to lease it at 5 per cent per annum on £60,000; in support of which their Auditor showed an annual profit since 1892 of £3,129, or for the three years 1895 to 1897 of £2,613 per annum.

Nothing came of that suggestion but during World War I the Company was in financial difficulties and I put up a scheme for it to be acquired by the Government, whereupon the Company's bankers came to its rescue, and then later, 1921, the same situation having arisen, the Government did lease the property. This continued until 1927, when the Commonwealth purchased all the Company's assets in Australia for £150,000; it being understood of course that there had been considerable additions over the years.

Turning now to New South Wales, it has been noted already that that Colony was making enquiries in England as to the costs of establishment of a factory, and estimates obtained from the War Office and from Greenwood and Batley were sent out during 1898. As nothing came of them little space need be given to ^{that} ~~them~~, but one interesting point was that both parties approached prepared their estimates upon a basis of working 40 hours weekly in a week of five days, so that the idea of a 40 hour week was long standing in my Department. As to costs, those concerned with such matters may be interested in the figures finally submitted by Greenwood and Batley: £17,325 for plant for manufacture of .303" ammunition including cap manufacture, loading the explosive, toolroom, rolling mills and foundry, plant to make Fulminate of Mercury (for cap), power plant, etc. but not buildings. The quantity to be produced was 5,000,000 annually on a 40-hour week basis. These proposals were discussed several times by the New South Wales Military during 1898 and 1899, mainly by way of criticising the estimated costs of details, and it appears from Loan Act No. 36 of 1898 that provision had been made therein for £19,500 for a factory at Newington, of which buildings would be £8,000, machinery and engines £10,500 (rolling mill excluded) and supervision £1,000. The factory was to produce 5,000,000 .303" cartridge annually of which 1,500,000 would be the annual consumption of

reserves, and 2,500,000 were noted as for "Sale to Imperial and Colonial Governments"; an extraordinary estimate indeed: there was no surety of sale to Imperial and Colonial Governments and 'certainly an addition of 1,000,000 cartridges annually to "Reserves" could not go on for very long.

Ref. 99/325

While New South Wales was thus carrying on internal discussions, Commander Collins was urging (30th January, 1899) that the matter of ammunition supply to all the Australian Colonies should be brought up at "the present conference of Premiers". He pointed out that there had been no settlement of the position as proposed by the Premiers in their resolution of March, 1898, and that New South Wales was still awaiting supply from Imperial sources of the .303" ammunition ordered for their new rifles; "it is evident that the Colonies could not rely upon getting their requirements satisfied in times of emergency"; he said that understanding had been reached with Colonial Ammunition Company for manufacture in Victoria of .303" ammunition, and that the Company then would be in a position to supply Australian requirements of same. In June, the Premier of Victoria sent copies of this memorandum and of Commander Collins' earlier memorandum of 14th April, 1898 (summarised above) to the Premier of New South Wales, and suggested that the question of a Government factory in that State should be left to the attention of the impending Federal Government, and that meanwhile New South Wales should order its current requirements from the Company. The reply was dated 28th September and it was signed by Mr. John See; I feel that it should be reproduced in full as an example of the unco-operative attitude in regard to Defence matters which was obtaining just prior to Federation; it emphasises also the need there was for Federation of Defence activities :

AND TO STATE
THAT I CONCERN
IN THE RESOLUTION
IS PASSED BY THE
OF PREMIERS
ON 17TH MARCH 1898
12: - THAT
IS THE GOVT
OF VICTORIA

I have the honour to acknowledge receipt of your letter of 6th September, on the subject of a Government Ammunition Factory, and forwarding a memorandum by Commander Collins, dated 14th April, 1898

elect within three months to establish a Government Small Arms Ammunition Factory, then the Government of New South Wales may hold itself at liberty to establish such a Factory in that Colony for the manufacture of Ammunition from Cordite'.

I note that the above resolution was arrived at after the Conference had before them and personally questioned the Commandants of Victoria and New South Wales on the subject, but that nevertheless on 14th April, 1898, Commander Collins, an officer who, I understand, retired from the Victorian Navy some 15 years ago, and is now holding a civil position in your Department of Defence, puts forward his own observations, disapproving of the resolutions passed by the Premiers.

I consequently feel reluctant to express any opinion on the views expressed till informed of the special qualifications of this gentleman for traversing the conclusions arrived at by the Conference of Premiers after consultation with the responsible Military Advisers of these two Colonies.

The Government of Victoria not having elected to establish a Government Factory, the Government of this Colony is apparently free to do so, and funds have been voted for the purpose, but what further action may be taken in the matter I am not at present in a position to state.

The experience of this Colony with reference to Ammunition supplied by the Colonial Ammunition Company has not been altogether satisfactory, some litigation has occurred, and more is threatened. I therefore do not feel disposed to act on your suggestion that the supplies of .303 Cordite Ammunition required by this Colony should be obtained from that Company, the more so as highly satisfactory ammunition is being delivered in Sydney at 13/1 per thousand less cost than you are paying.

In view of Resolution 14, I would feel obliged by being informed who has already suggested 'to the other Governments of Australia' that the question of a Government Ammunition Factory should be left to be dealt with by the Federal Government.

There were traces also of something else in the background, of historical influence, which in my opinion contributed to the attitude of the governing authorities of New South Wales. It is obvious to me that Mr. See's letter was inspired by Military headquarters, and that the Military Commandant in Victoria could have known something about it also. I think that it had relation to the long-standing resistance, dating back to Cromwellian times, of the "King's Army" to "Parliamentary interference", which only was

institution of the Army Council system by the Asner Committee in 1904. Not surprisingly, similar principles of Army Administration obtained in Germany having regard to the strong German army influence upon the British Army from the time of George I, which reached its ^{zenith} ~~peak~~ with the long reign of the Duke of Cambridge as Commander-in-Chief of the British Army until that appointment was superseded by the functions of Command being placed with the Army Council. As for Germany, a review recently by the London Times of a recent publication "The Politics of the Prussian Army 1640-1945" may be quoted: "The final chapter tells the dramatic story of how an army from its origins had successfully defied civilian control was mastered and destroyed by Adolph Hitler". The Military Commandants of New South Wales and Victoria immediately prior to Federation were respectively Major-General Sir George French, C.M.G., R.A., and Major-General Sir Charles Holved Smith, both being on loan from the British Army. Their official lives consequent had been spent under a system whereby the Army administration was centered at the "Horse Guards, Whitehall" under the rule of the Duke of Cambridge, in his capacity as Commander-in-Chief with responsibility only to the Sovereign. There was also a Cabinet Minister, the Secretary of State for War, but such little influence as he had over Army affairs could only be exercised by means of his control of the Annual Appropriation for the Army, and because he had Ministerial responsibility for an Army Act which had to be re-enacted annually so that Parliament might have some control over the Army and the uses to which it could be put. It will be obvious that under such an arrangement there could be friction, and even antagonism, between the headquarters at the Horse Guards, and the civilians at the War Office.

how

OF THE NAVY
AND MILITARY
AND THAT IT
COMMANDS
SHOULD

In Victoria, for years before Federation, it had been insistent public policy that there should be

the hands of a civilian Department forming part of the Public Service, of which the Permanent Head under the Minister for Defence, with the title of Secretary for Defence, was Commander Robert Collins, a retired officer of the Royal Navy and formerly Commander of the Victorian Naval Forces. In New South Wales there was no Minister for Defence and no civilian Defence administration; there was a vague responsibility of the Military Commandant to the Government, which he approached through the Minister holding office as Chief Secretary and the Principal Under Secretary, but if his secret thoughts could have been probed it is likely the viewpoint found there would have indicated a conviction that as the Commandant held the Queen's Commission, it was to the Governor of New South Wales, in his capacity as Commander-in-Chief, the ^{Commandant} Governor should look as "higher authority". After the institution of the Commonwealth, when Sir Edward Hutton of the British Army was appointed to be General Officer Commanding the Commonwealth Military Forces, his staff was built up mainly from Sir George French's principal staff officers, and soon friction of the same kind developed between General Hutton and Captain Collins, by now Permanent Head of the Commonwealth Department of Defence; in short, General Hutton resented and resisted what appeared to be civilian interference between himself and the Commonwealth Minister for Defence, Sir John Forrest; it only ended in 1904 with the departure of General Hutton, and the inauguration of a Military Board of Administration for the exercise of functions similar to those delegated to the Army Council in England on the recommendation of the Escher Committee. It is curious that a leading member of the Escher Committee

X

OF THE ARMY
Council
Principal of
ADMINISTRATION
IN AUSTRALIA

was Sir George Sydenham Clarke, just recently returned to England after a period of office as Governor of Victoria. I have nothing substantial to warrant it, but I am convinced

It is with all these considerations in my mind that I venture to assert that it was military resentment against civilian interference by the hand of the Secretary for Defence in Victoria that influenced the wording of letters from New South Wales to the Victorian Premier during the pre-Federation period in addition to the customary intercolonial jealousy, and that it was because of the latter that they were not "toned down" in the Premier's or Chief Secretary's offices.

Captain Collins, as he was now designated, denied the implications of Mr. See's letter, and meanwhile a new Premier had taken office in New South Wales: Mr. W.J. Lyne. On 3rd October, the Victorian Premier, Mr. George Turner, sent the following letter to Mr. Lyne:

In Mr. See's letter of the 28th ultimo respecting a Government Ammunition Factory, he refers to the memorandum on the subject by Captain Collins, a copy of which accompanied my letter of the 6th ultimo, and states that he "feels reluctant to express any opinion on the views expressed till informed of the special qualifications of this gentleman for traversing the conclusions arrived at by the Conference of Premiers after consultation with the responsible Military Advisers."

I referred the letter to the Honourable the Minister of Defence, and have now received from him the accompanying copy of a memorandum setting forth the circumstances under which Captain Collins, the Secretary of Defence of this Colony, expressed his views on the question under discussion, and also the special qualifications which he possesses for forming a reliable opinion on the subject. With regard to this gentleman, I feel sure that Mr. See must, when writing, have been under some misapprehension which, however, I hope this letter will remove. Captain Collins is a highly efficient and valued officer and adviser of this Government, whose views I have always found worthy of the fullest consideration and who, as well as the Military Commandants, was consulted by the Premiers at the Conference to which Mr. See alludes.

With reference to the last paragraph of the letter I would state that it was I who suggested to the other Colonies, upon the recommendation of my colleague the Minister of Defence, that the question of a Government Ammunition Factory should be left to be dealt with by the Federal Government.

After these explanations I trust the question of the factory will receive consideration on its merits.

The last word apparently upon these exchanges in New South Wales is contained in a memorandum by General French to the Principal Under Secretary in January 1900. He said that the question had narrowed down to whether the advent of Federation would see a Government factory in New South Wales or a private factory in Victoria; that he had always held the view that a vital necessity for Defence such as ammunition should only be manufactured by Government "whose interest would be to make good ammunition without any question of shareholders' dividends". In this, of course, he was giving no thought whatever to the functions of the Government inspectors, an essential always in the manufacture of munitions and for which provision had been made in Victoria with Mr. Hake as adviser. After further advocacy of the course he was recommending, and upon the assumption that the Government would agree with him he went on to discuss ways and means, but did not recommend that the Government should take the risk of starting up "ab initio"; he concluded that there were only two possible courses open -

Invite Nobel's to start manufacture with the option of the Government taking over the works within a fixed period for a stated sum

Request the Imperial Government to initiate a factory at the expense of New South Wales, to be handed over as a going concern at a date to be fixed.

both of which I personally consider would have been unpractical and likely to cost considerably more than would be the case if the business had been undertaken solely as a commercial enterprise. That practically was the end of the discussions with New South Wales. In April, 1902, the New South Wales Government file on the matter was transferred to the Commonwealth Department of Defence without any further action being disclosed.

discussing the merits of a Government factory in New South Wales vis-a-vis a private factory in Victoria in respect of .303" ammunition, the Victorian Government was undergoing pressure from Captain Collins, and vigorous propaganda from the Australian Explosives and Chemical Company on behalf of the Nobel concern, in regard to production of Cordite in Australia. On 29th January, 1900, the A.E.C. Coy. protested to their local member: S.T. Staughton, M.L.A., about the delay on the part of the Government in making up its mind in regard to Cordite being made at their works at Deer Park, that they wanted no capital assistance but only "orders for a definite quantity per annum". This resulted in a telegram being sent by the new Premier of Victoria, Mr. Allan McLean, to the Premier of New South Wales reading -

Defence
1900/1/29

War Office unable meet requirements from Colonies for supplies of cordite ammunition. With reference to previous recommendations for establishment of a cordite factory in Australia, the Australian Explosives Company at Braybrook, which is a branch of Nobel & Co. the great cordite manufacturers, are prepared to at once add the necessary machinery for manufacture of cordite on being guaranteed the supply from all the Colonies. This Government is prepared to negotiate with them if other Colonies concur. Matter of greatest importance, and this company is the only company in Australia in a position to at once start manufacture.

Copies were also sent to the other Premiers and to New Zealand, and while New South Wales said they could get a Company there to erect the necessary machinery they practically ignored the suggestion by saying that arrangements had been completed for the supply of ammunition. The other Colonies and New Zealand professed interest but wanted more information or else preferred to leave the question to the coming Federal Government.

While these discussions were proceeding,

HAD BEEN ISSUING PRESS

Victorian Defence Department. A spate of letters poured

in from the Colonial Ammunition Company through Captain John Whitney who happened to be in Melbourne at the time. He contested statements said to have been made in New South Wales about prices and urged that these could only be at risk of supply of an inferior quality of ammunition, and followed this up a few days later with another letter in similar terms. There was also an offer of lease or sale of the Company's Footscray works to the Victorian Government in order, he suggested, that the proposals of the New South Wales Government might be forestalled.

Supra
1900/1172
4173
14708
6355

All this was repeated later in the month (February) and again in April and in June, and although nothing came of it in that year of 1900, it was in the event the commencement of a long campaign which only ended when the Commonwealth Government leased the works during 1921 and purchased them in 1927.

The newspaper reports also stimulated the Nobel interests to renewed activity; in February, 1900, the Australian Explosives and Chemical Company advised that they were willing to deal with Victoria alone, and that the other Colonies could join in later if they wished; that there was on hand in Glasgow a complete plant for cordite production which could be shipped at once. Later in the month another letter offered the cordite at English price plus 1/- per lb. plus an overall subsidy of £1,000 per annum. Captain Collins in company with Mr. Hake discussed the proposals with Mr. Tolley Jones, General Manager of the Company, and on 2nd March submitted to Cabinet that an agreement should be entered into the Company for purchase annually, on the above conditions of 10,000 lbs. cordite. He said that the Waltham Abbey

cordite (British Government factory) was costing 1/11d.
PER LB AT FACTORY AND 2/3 PER LB LAMBER IN AUSTRALIA

but that the Government made cordite would be excluded from his proposal and that contractors' costs would be followed. On 26th March it was recorded on the papers "Cabinet decided to leave to Federal Government".

Def. No. 1902/1713

Captain Collins however did not rest upon this, he re-submitted his proposals in June 1900, no doubt under the stimulus of the adverse situation in the Boer War, when it happened that Dr. Carty Salmon was acting for the Minister for Defense (Hon. D. Melville, M.L.C.)

1902/1742

this time dealing in greater detail with the economics of the matter and it was agreed that estimates of cost of building a factory should be obtained from England. Various cablegrams and letters passed but while estimates were received, for example, that a complete cordite factory would cost £70,000, the information supplied was ~~inclusive~~ ^{inconclusive} because both in Australia and England, through lack of knowledge of the processes involved, lack of decision as to what of the constituent parts would be purchased or made in factory, and so on, it was insufficient for determination of anything positive. There were similar uncertainties about the costs of production based largely upon the fact that while Victoria was ~~considering~~ ^{thinking about} a factory for production of five tons annually, Waltham Abbey was producing at the rate of ~~30 tons weekly~~ ^{of cordite} and Nobels at Glasgow about 2500 tons annually. To conclude ~~this~~ ^{this}

X
X
X
X

1500 tons annually

1902/1745

survey of the position as it existed prior to Federation: Cabinet discussed the matter in July 1900, and Captain Collins re-submitted fresh proposals by Nobels in October 1900, only to obtain an endorsement "Bring up again".

X

~~The inauguration of 1901~~
At this stage we must pause in ~~the~~^{the} story,
a new era in our history ~~is~~^{was} beginning, the Commonwealth of
Australia ~~is~~^{was} to be inaugurated on 1st January 1901, and
~~will~~ become responsible for the Defence of Australia and
all that pertains^{ed} thereto, and the separate Colonies,
now to be "States", ~~will be~~^{would cease to be} concerned ~~no longer~~ with the
subject matter of this narrative. Two months however
~~are~~^{were} to elapse before the respective ~~Defence~~^{colonial} administrations
and the Armed Forces ~~will~~^{could} be transferred; thus the
Commonwealth Minister for Defence ~~will~~^{would} have time to set
up his Ministerial office and acquaint himself and his
colleagues with the great responsibilities ~~being~~^{now} assumed
by the new Government and the functions he as Minister
will have to exercise.

Unfortunately there was delay at the
outset through an untoward event: the Minister appointed
to the office: The Honourable James Dickson, lately
Premier of Queensland, died on 10th January 1901, and
this involved selection of a successor: Sir John Forrest,
G.C.M.G. lately Premier of Western Australia, was sworn
in and set about the arrangements necessary.

As I personally was established in the
Victorian Department at this time, it will be convenient
perhaps if I introduce myself now in this record of the
production of munitions of war in Australia. On 20th
June 1900, I took up duty as Junior Messenger in the
Ordnance Stores at Victoria Barracks, St. Kilda Road,
Melbourne, on transfer from 2½ years service as Telegraph
Messenger at Bendigo Post Office. The Ordnance branch ~~was~~^{was a}
civilian organisation, ~~formed~~^{forming} part of the Victorian
Defence Department, the Minister for Defence being the
Hon. Donald Melville, MLC, and its business was the

procurement of naval and military stores and equipment and the holding of bulk stocks and replacements in store against demands by the respective Forces. The offices and store buildings were located in the southern section of the barracks area, and there were explosives and ammunition magazines at Altona (Truganina) and Karibyrnong to the west of Melbourne. It may be of interest if I note here that explosive ammunition was being stored also in the Ordnance Stores area on the frontage to St. Kilda Road, and that two employees had been killed in an explosion there some years previous to my appointment in the branch. The storage there of "live" ammunition ceased about 1905. Prior to 1884 the storeholding of Military stores and equipment was a function of the Armed Forces, but in that year, as a result of the report of a Royal Commission upon the administration of the Military Stores branch, it was made the responsibility of the civilian administration under the Minister for Defence, and the staff and employees were appointed under the Public Service Act. When I joined the Ordnance branch, the Boer War had been in progress for almost nine months, and four contingents of mounted troops had been despatched by the Colony of Victoria for service in South Africa. In 1900, after my entry upon the scene, a Naval Contingent was despatched to China for service during the Boxer Rebellion, and a fifth contingent was being organised for service in South Africa; to sail in February 1901. Other contingents, under Commonwealth auspices, were despatched later and thus I was actively associated with the procurement and provision of "munitions" from the outset of my career in the Department of Defence -

the only boy employed in

the civilian side of the Department and holding the most junior position. There were two or three boys in the Permanent Artillery however, with duties as Buglers but carrying the appellation "Boy", e.g.: Boy Peacock, later well-known as departmental Librarian and an authority on Heraldry, and occasionally one of these would be stationed in Barracks. In thinking back upon those times at this present writing; in a preceding paragraph I mentioned some events of June 1900, and obviously had to check them with the relative departmental correspondence, and there I saw handwriting and signatures with which I was familiar in 1900; I am able even to recall to mind the personal appearance and characteristics of the writers: Captain Robert Muirhead Collins, Head of the Department - I saw him last during 1919 in London; Mr. Thomas Trumble, Senior Clerk of the Defence Department - he was my departmental head during World War I and for years afterwards, and died only recently; and Mr. Frank Savage, Controller of Stores - I saw him also in London during 1919 - who was my immediate superior during 1900 and 1901. It was through Mr. Savage incidentally that I first became acquainted with a munitions factory; he was chairman of the Testing Board appointed to inspect and test on a firing range all the ammunition being made by the Colonial Ammunition Factory at their Footscray factory, and in 1900 it was part of my duties as messenger to accompany the Board to the factory to prepare the tea for their lunch and perform other duties as required. There was not much call for my services and so I had time to look around and thus commenced my initiation into what turned out to be my life work: the production of munitions;

day I would have the chief responsibility for the administration of those same works. The other members of the Board were Captain H.C. Somerset, representing the Army - typical of many of his kind at the time, some of them survived until 1914 and then disappeared for ever - and Mr. C. Napier Hake already mentioned as departmental adviser on Explosives. Also present at the meeting were the redoubtable Captain John Whitney, founder of the works, over from New Zealand on a visit, and Lieutenant H.B.L. Gipps, then a subaltern of the Royal Australian Artillery, charged with duties of assistance to the testing officers, in his 19th year only then, but destined to be Chief Inspector of Munitions in the period between the wars and Inspector-General of Munitions during World War II. There is significance in most of the names mentioned in this paragraph: undoubtedly Captain Collins was the driving force in the years preceding and following Federation in respect of munitions production; he was assisted in this by Messrs Savage, Trumble and Hake, and Mr. Savage had much to do with it becoming my career in later years. Mr. Hake encouraged me, and for the greater part of my life Mr. Trumble supported me in every way possible. Captain Whitney, of course, was the initial manufacturer, and proved that it could be done, and Colonel Gipps became the authority responsible for the acceptance of the products into the Services. Or to put it in another way: Captain Collins, Captain Whitney and Mr. Hake were the foundation in 1900 upon which the vast structure of 1939-1945 was built. It was carried on after Federation by Messrs. Savage and Trumble and others who joined later, and Colonel Gipps and I were the link between the initial days of 1900 and the direction of operations during World

is that 56 years were to pass before I would be writing about those initial days of 1900. And while I am discussing these embryo days in munitions production it might also be noted that we rarely heard then of the word "munitions"; in superior circles the expression "war materiel" was favoured, but in general the fighting equipment of the Army was known as "Ordnance Stores", or sometimes "Warlike Stores".

On 1st March 1901, the Federal Minister for Defence, Sir John Forrest assumed the responsibilities of his office and subsequently it was notified that the civil administration of the Victorian Defence Department would be the nucleus of the Commonwealth Department of Defence, and that Captain Robert Collins would be the departmental head with the designation; "Secretary, Department of Defence". The existing civilian staff was continued in the respective offices, with the addition that Commander S. J. Pethebridge, ^{of the Queensland Naval Service, until then} ~~Secretary~~ Secretary of the Marine Board in Queensland, was appointed to be Chief Clerk of the Department of Defence with precedence immediately after Captain Collins. Mr. Pethebridge (as he ^{now} became then) succeeded Captain Collins in 1905 as head of the Department, but there was no change in the munitions production policy; if anything it was promoted more energetically under Mr. Pethebridge's administration.

Central Arsenal Proposed (Italics)

ed 1901/685

On 14th March 1901, exactly two weeks after Sir John Forrest had assumed his Ministerial charge, Captain Collins submitted to him a memorandum outlining the current position in regard to Munitions Supply, the salient features of which, after referring to "suggestions

that were placed before the conference of Colonial Ministers in London in 1897, for the establishment of a Central Arsenal and Depot for the Australian colonies", were -

the possible insecurity of the trade routes,

the probability of the manufacturing resources of the United Kingdom being taxed to their utmost capacity in wartime,

the possibilities of manufacture of projectiles,

the certainty that a smokeless powder factory should be established in Australia,

desirability of manufacture in Australia of fuzes and other ammunition components,

the desirability of extension of the local small arms ammunition factory to meet the requirements of all the Australian States,

Captain Collins urged particularly that early consideration should be given to the question of manufacture of Cordite in conjunction with the Australian Explosives and Chemical Company at Braybrook, and to the extensions to the Colonial Ammunition Company's works at Footscray for manufacture of the Commonwealth-wide requirements of Small Arms Ammunition.

Ref. 1901/257

On 15th April 1901, Captain Whitney submitted a memorandum by the Chairman of the Colonial Ammunition Company in London summarising its position to date. He said the Company had made large additions to its Footscray factory for manufacture of 303" ammunition and is now prepared to erect Mills for rolling the brass and nickel strip required in manufacture of the cartridge cases and the bullets. He also stated that his Company had made arrangements with the Australian Explosives and Chemical Company to manufacture the cordite necessary provided there was assurance of a quantity that would justify the capital expenditure involved, and that the plans could be extended upon the same conditions for manufacture and repairs of

Meanwhile, on 23rd April 1901, a

further Indenture was recorded whereby the amount of land leased to the Company was extended to cover the whole of Allotment 2 of Section 15, amounting to 40 acres, from the Saltwater (Maribyrnong) River to Gordon Street to a width of 900 feet all the way; this lease to expire at the same time as the original lease, about 1914. The object of this lease was to enable the Company to make extensions for rolling mills, etc. in the event of agreement being reached in that connection.

Def. 1901/3324 With similar considerations in mind, particularly the necessity for provision of a Commonwealth Arsenal, there was a further exchange of correspondence in June between Sir John Forrest and the Prime Minister (Mr. Barton) upon a recommendation by Captain Collins that in the event of several hundred acres of land being required for Arsenal purposes, the Maribyrnong Magazine area of nearly 400 acres should not be disposed of by the State Government of Victoria. It was agreed that the Premier of Victoria should be approached accordingly and he expressed agreement on 23rd October 1901.

Def. 1901/945 On 25th June, Captain Collins re-submitted his proposals of 14th March. He reported that the Military Commandants in the various States had expressed the opinion "it is highly desirable that the Commonwealth should undertake the manufacture of small arm ammunition as a Government matter, and they do not advise the extension over the Commonwealth of the monopoly now held by a private Contractor in Victoria, and consider that the supplies to be furnished by that Contractor should be limited to his contract with the Victorian Government, viz; to meet the requirements of

the forces in Victoria." The comment upon this by Captain Collins was "the question of supply is a business as well as a military matter". This submission by Captain Collins covered a more comprehensive memorandum he had prepared on 7th June previously in which he said there were possible courses.-

1. To establish a Government Factory;
2. To come to an agreement with the existing Colonial Ammunition Company superseding the present agreement which is limited to the supply for the State of Victoria;
3. To purchase the existing factory.

Of these he favoured No. 2, an agreement with the existing factory; that that would be preferable to the capital expenditure of £60,000 to £100,000 involved in the establishment of a Government factory, apart from the delay there would be in its construction; he suggested that if such agreement could not be arranged satisfactorily then perhaps consideration could be given to buying out the Company. Captain Collins also said that he favoured a Government factory for explosives production, he pointed out that cordite could not be manufactured for less than 5/- per lb. having regard to the required annual output whereas it was being imported for about 2/- per lb, but he offered no advice or recommendation in that connection. There is no record of any action on this submission, but meanwhile the Colonial Ammunition Company had been given sufficient orders to enable continuance of manufacturing for the financial year 1901-1902.

The position generally with regard to 1901, the first year of Federation, was that it was a period of settling in and there was little real action to be reported, but as this is an historical survey there is warrant perhaps for permanent record of some interesting incidents of that year which have indirect relation to the narrative.

01/1,59

Captain Collins advised the minister

under the agreement prices to be paid to the Colonial Ammunition Company for current supplies of ammunition would be arranged in London between the Agent-General for Victoria and the Company based upon -

War Office price in bulk plus 5½ per cent War Office charges for inspecting, wrapping and packing.

6/5d. per 1000 for the wooden box.

10 per cent on the total of the foregoing on account of the smallness of the order and as allowance for the increased cost of manufacture in Australia.

plus the cost of shipping and landing in Australia.

He said that a price for .303" Mark VI ammunition calculated upon the foregoing factors would be £6.2.6 per 1000 in Melbourne, but that as orders were now larger (arising out of Commonwealth needs and the War in South Africa) £6.0.0 per 1000 should be offered to Captain Whitney, and that the price for .45" Martini-Henry ammunition should be £5.5.0 per 1000. The recommendations were approved by Sir John Forrest.

01/2047

Another highlight was a Parliamentary visit to the works of the Australian Explosives and Chemical Company at Deer Park. From the newspaper reports it is gathered that there was a considerable party including the Prime Minister (Mr. Barton), the Postmaster-General (Senator Drake), the President of the Senate (Sir Richard Baker), Senator Pearce, about a dozen members of the House of Representatives including Messrs. Crouch and Tudor, and Colonel Templeton (Chairman of the Victorian Rifle Association) as well as Captains Collins and Whitney, and Mr. C.N. Hake. Mr. G.A. Evans, Assistant Manager, received the guests and it is notable that his assistants ^{included} Mr. H.W. Gepp. There were ^{reported} three four-horsed drags to carry the party and the newspaper that Messrs. Barton and Drake "rode out and back on the front seat of a Thomson motor car"; that "The drags arrived in good time (they left after the car), but there was

Barton

X

X

X

some anxiety about the motor car, which pursued a somewhat devious course, and traversed unnecessary lengths of road before depositing its occupants at the factory". After inspecting the factory, Mr. Evans proposed the health of the Prime Minister and said the present Company had been established in 1876 for the manufacture "of what were technically known as high explosives, the basis of all its manufactures being nitro-glycerine" and that they also produced nitric acid and sulphuric acid on the only plant of its kind in Australia. In reply, Mr. Barton said "It was impossible at present to say what would be the policy of the Government with regard to the manufacture of cordite; he could not say whether they would take it up themselves or let it be done by private enterprise. The day must come very soon, however when the Government would either purchase or manufacture all its cordite in Australia. Even the staunchest opponents of militarism would have to admit that." Further he said: "It was absolutely necessary, in the near future, that Australia should be provided with a factory to turn out munitions of war, and especially cordite".

It should be recorded also that Major-General Sir E.T. Hutton, K.C.M.G., C.B., of the Imperial Forces, was appointed on 26th December 1901 to be General Officer Commanding the Military Forces of the Commonwealth. X

Defence matters remained quiescent during the first months of 1902 while General Hutton was organising his staff and generally acquainting himself with local conditions and it happened in the course of these operations that I had opportunities, in a humble capacity, of acquiring some knowledge of the proceedings: the head of my branch, Mr. F. Savage, Controller of Stores in Victoria, was given a dual appointment as Principal Ordnance Officer on the staff of General Hutton's "Assistant Director of Artillery and Stores" who by a coincidence, ^{in name} was Lieut-Colonel A.H.P. Savage, transferred

from the New South Wales Permanent Forces but no relation to Mr. F. Savage. It turned out therefore that in addition to being typist to Mr. Savage, I also did typing in the office of Colonel Savage when the matters dealt with concerned the Ordnance Stores Branch, such as the dealings with orders for manufacture of small arms ammunition.

02/1887

The records show that the Colonial Ammunition Company reiterated its proposals in March 1902 for an extended agreement to cover all Commonwealth requirements of ammunition, this time offering to provide rolling mills and accessory foundry equipment, and with an option for the Government to purchase the factory at any future date. To this it is evident the Minister and the Department were favourably inclined; they sent a draft of a proposed agreement to General Hutton for consideration. The draft provided specifically for a contract for supply of 12,000,000 .303" cartridges annually as a minimum - a doubling of the existing agreement with the Company - but the rolling mill additions were not positively stated. General Hutton in reply expressed himself as not favourable to "making any contract with a private firm for such a vitally important supply as that of small arm ammunition" but if it was a temporary expedient the contract should be for six years instead of twelve years. He also pressed for inclusion of clauses whereby all the ingredients for manufacture of the ammunition should also be made in Australia or at least that the machinery for such manufacture should be in Australia and available for emergency.

02/2645

02/2646

That memorandum was accompanied by another one bearing the same date 19th April 1902 in which General Hutton said -

I am of opinion that a Small Arms Ammunition Factory should be established, and that the factory in question should be erected on the

site for the future Arsenal of the Commonwealth. The small arm factory to be acquired or constructed by the Commonwealth Government should in my judgment form portion of the Arsenal above alluded to, and should include a shell foundry. This arrangement was undertaken by the Canadian Government a few years ago, and the whole of the small arm ammunition required by the Dominion of Canada and the whole of the cast iron shells and more recently the steel shells required for the Field Artillery are now manufactured at Quebec. Important as it is for Canada to be independent for her ammunition supply distant as she is 3,500 miles by sea from Great Britain, it is at least three times more important that Australia should be in a similar position.

This extract reads somewhat confusedly because while "small arm factory" i.e.: a rifle factory, is named, it is not certain whether General Hutton had in mind an "arms factory" or an "ammunition factory", to be included in the Arsenal he was recommending. In a subsequent Minute in the same month, the General discussed questions of alterations to the Fortress and Field Artillery guns and mountings, and improvements to the Ordnance workshops for such purposes, stating that the shops thus enlarged would be "a preliminary step to the creation of the Laboratory and Gun Factory as an integral part of the future Arsenal, to which I have referred in Part VII of my minute on Defence, dated 7th April", the latter being his initial general report upon the condition and the future of the Commonwealth Military Forces then being organised. Included in the file of papers is a memorandum dated 20th May 1902, which is signed by Sir George Sydenham Clarke, accepted throughout the Empire as an authority on matters of Defence, and at the time Governor of Victoria. It was obtained from him probably by General Hutton seeing that it bears a military registration number only, and it is considered that the eminence of the writer warrants inclusion in this narrative of the following extracts -

1. It is imperative that the Commonwealth should be rendered independent of any exterior source of S.A. ammunition.

→ LARGE PERMANENT RESERVE OF SUCH

Def.02/2655

Q.M.G.
Dc/465

(Amended)

ammunition will
CREATED AND
MAINTAINED IN

Australia, nor is it desirable
be kept for long periods. Wars occur suddenly
and the manufacturing power in England is
limited. When the War in South Africa broke
out, the manufacturing sources were strained
to the utmost extent and the requirements were
barely fulfilled. Even if this were not so,
it would be madness to depend upon the import
of large quantities of ammunition after an
outbreak of war. It appears therefore to be
an axiom of Commonwealth policy to be independent
in this respect.

2. It is desirable that Field Artillery & Q.F. ammunition at least up to the 12 Pr. calibre should be locally made; but I regard this as impracticable until a Steel industry has been developed, which must require some years.
3. I think each State should possess the means of carrying out the ordinary repairs to all material of War that it possesses, and that there should be a central factory capable of going considerable renewals such as re-lining guns or replacing breech-blocks. I doubt whether it is desirable to attempt to establish a central factory at present, as there would not be enough work to keep the necessary plant employed.

General Hutton favoured the Arsenal, when established, being located at Newington Magazine area, mainly because it was already Commonwealth-owned land, and Sir George Clarke supported him in this and further "so as to be in proximity to the coal and iron", but he accepted the idea that the small arms ammunition factory need not necessarily be in Sydney "as there is no difficulty in the transport of such ammunition", and further "Nor is Sydney so central as Melbourne". After the lapse of 50 years these strategic considerations would be examined differently; in 1902, aeroplanes were regarded by the majority as science fiction is now ^{being} viewed, and on the other hand the proximity of coal and iron is no longer a necessity, but other proximities have become very important to nations bordering on the Pacific.

In his report of 29th April, 1902 to the Minister on General Hutton's memoranda, Captain Collins said nothing about the Arsenal proposal, and in fact it remained in abeyance for about two years, but it will be convenient to complete here the record for the period of General Hutton's

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experience; they were reduced by a vote of 100 to 50 to an amount of £61,000 odd. This extraordinary happening is not a matter for discussion in this narrative, but it could have caused delay in dealing fully with General Hutton's proposals. However it was opened up again in May 1904 in a memorandum by Captain Collins to General Hutton -

With reference to the question of the establishment of an Arsenal at Newington, New South Wales, and to the General Officer Commanding's references to a report made by him in the matter, I am directed to state no such report appears to have been received at this office, and the Minister will be glad, therefore, to be furnished with the General Officer Commanding's remarks on the subject as early as possible.

The papers do not disclose where or how the G.O.C.'s "references" came to notice but obviously the wording of the memorandum is an example of the already mentioned military v. civilian atmosphere, which at this date was rapidly coming to a head, because the Watson Labour Government was now in power, and the Minister for Defence, Mr. Anderson Dawson, - not one of our great Ministers - was openly hostile to the military administration. The reply received from General Hutton, dated 11th June, 1904, was addressed to "The Minister for Defence" - he consistently ignored the departmental Head - and opened thus -

The Secretary informs me in the attached minute of the 25th ulto., that no report as regards the establishment of an Arsenal has been submitted to the Minister. I wish to invite your attention to Part VII of the Minute on Defence dated 7th April, 1902, and to Clause 30 of my Annual Report of 1st May, 1903. In the latter I have stated that a suitable site has been found in the neighbourhood of Sydney.

and then he goes on to give full particulars of the plans he has in mind. It is necessary only in this narrative to outline the facts briefly, but perhaps I can express the opinion here, as General Hutton is now making his last appearance, that much of the difficulty he experienced was due to his obstinacy in refusing to accept the position that the Defence administration in Australia was not an oligarchy, as had been the custom in

England & had which - fact, on the advice of the "Est. Com. etc."

was on the point of being abolished there, and that under the law of Australia, the Secretary of the Department of Defence was the Permanent Head of the Department of Defence in Australia. Furthermore he should have known, and certainly there was advice available to him on the matter if he could have consented to work in a friendly way with the civilian administration, that annual reports are always regarded in those circles as general surveys - certainly not to be accepted as matter of course - each item of which would be taken up in due form as a detailed proposal supported fully with specifications, plans and estimates of cost. With this understood it will be appreciated that Captain Collins was correct in his approach to General Hutton.

As it was, even in that reply, General Hutton gave only a broad outline of what he had in mind; certainly there was a plan of the Newington site, and some information about its suitability, but still it was not much more than a request for a blank cheque for a works programme set out briefly as -

Storage accommodation

Space required at Newington to New South Wales and Queensland; Other depots required at Perth for Western Australia, and at Melbourne for remaining States. Space required and proposals being worked out.

Grand Magazine

Goat Island, Sydney Harbour, to be obtained for storage of Fortress ammunition for New South Wales and Queensland.

Small Arms Ammunition Factory

Repeated what had been said already about this, as shown elsewhere, and also about manufacture of Artillery Ammunition, and of Cordite.

Small Arms Factory

"The time has not arrived in my judgement for the erection in Australia of a Small Arms Factory. The establishment of a factory for small arms at a future date should, however, be borne in mind."

Gun Foundry

"The remarks as regards a Small Arms Factory also apply to the future requirements as regards a Gun Foundry."

short he was making little provision for a "Arsenal"

fr. 04/4279

his advocacy of a Government Small Arms Ammunition Factory to be established at Newington and that this should include small calibre, simple types of artillery ammunition. Captain Collins made no comment upon this outlining, he merely asked the Department of External Affairs to transmit a copy of the memorandum through the Governor-General to the Imperial Defence Committee in England for favour of its advice. He asked further that the Committee, to which Sir George Clarke had been appointed Secretary, should say whether it was advisable to concentrate all the works in one place as advised by General Hutton and that it should be ascertained from the British Government whether it would purchase any of its requirements from Australian Government Factories if established. No response to this has been traced, and the matter of a general arsenal was left in abeyance for a decade, but meanwhile individual factories for cordite and rifles were developed.

Small Arms Manufacture.

Before Federation, the Victorian Infantry battalions were armed with the single-loading Martini-Henry .45-inch rifle. The Mounted troops were using the Martini-Henry Carbine, practically the same weapon with a shorter barrel, but there was a minor difference in that when not in use the carbine was carried in a leather holster attached to the saddle, whereas the infantry weapon was fitted with a leather "sling" to enable the soldier to carry it across his back on occasion. The barrels of the weapons were bored to accommodate a leaden bullet of .45 inch diameter, and the loading mechanism, known technically as the "Martini action" (an Austrian invention, probably the most effective ever devised for single-loading weapons), was a block of steel dropped by a lever whereby the rear of the barrel (the chamber) was exposed for entry of the brass cartridge with its bullet.

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 A REPORT
 JAN 1896
 BY I. C. NAPIER
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 USED
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 AMMUNITION

The first mention of a change in the type of rifle to be used in the Australian Colonies appears to have

of rifles, and as shown in preceding paragraphs, the standard adopted for rifle barrels using cordite was a bore of .303-inch diameter. The Secretary for Defence, Commander R.H.M. Collins, in submitting Mr. Hake's report to the Premier of Victoria, drew attention to a forthcoming meeting of the Military Commandants of the various Colonies arranged to consider "what pattern of small arms should be accepted"; Commander Collins pointed out that there should be no decision about the pattern of rifle until after discussion about the type of explosive to be used. That this was a consideration of importance came out clearly as a result of Mr. Hake's enquiries later in England; in his report of January 1897, he mentioned that the use of cordite would accelerate deterioration of the rifle barrel in comparison with gunpowder because of the greater heat generated, thus shortening the "life" of the weapon. However, the expert advice later was that the life of a Lee-Netford .303" magazine rifle barrel was 4,000-6,000 rounds of ammunition and that this was satisfactory - being equivalent to at least 20 years (peacetime) service. It was expected also that contemplated improvements in the cordite would "tend to considerably lengthen the period of serviceability". It was important also to the manufactures of the ammunition that they should have ample warning of a decision to change the pattern of ammunition so that they might install the plant necessary for manufacture to the new designs and thus avoid a break in the continuity of supply; a possibility detrimental to their business as well as being dangerous from the Defence standpoint. With those considerations in mind the proprietors in England of the Colonial Ammunition Company advised the Victorian Minister for Defence, 5th May, 1897, of their willingness to send out to their Footscray factory "the necessary machinery, apparatus, and a skilled staff to enable us to

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letter from the Colonial Ammunition Coy. dated 26th November,

the statement is made "In view of the adoption by the Colonial Governments of the .303" rifle for the use of the Military Forces in the Colonies"; it is repeated also in a letter written by Mr. S.T. Batley (of Colonial Ammunition Coy.) dated Australian Club, Melbourne, 24th January, 1898, to the Minister for Defence (Hon. William McCulloch) opening thus: "In view of the adoption of the .303" rifle by the Governments of the Australian Colonies", his intention being that he should wait upon the Premiers of all the Colonies to discuss supply to them of .303" ammunition to be manufactured at the Company's works at Footscray, Victoria. These letters suggest that action had been taken before Federation to adopt a .303" rifle and its ammunition, but I have seen no record to that effect and I do not know whether the pattern was to be the Lee-Netford Magazine rifle, the type then favoured in England, or the Martini-Enfield .303" single-loading rifle. It would appear nevertheless that as Martini-Enfield rifles were on issue to the Infantry when I arrived at the Ordnance Stores, Melbourne, in June, 1900, and the .303" ammunition for them was being made at the Footscray factory, that the single-loader was preferred in the first instance; the higher cost of the Magazine rifle would have influenced the preference. It will have been gathered from the name that the rifle was of the same general design as the Martini-Henry .45" rifle which preceded it; the loading mechanism was similar but the barrel was bored for a ^{.303"}~~.302"~~ bullet. Perhaps it should be explained also that the "Enfield" in the designation indicated that the rifling of the barrel was to a form designed at the Royal Small Arms Factory at Enfield, England.

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of a central arsenal but as the paper was marked "This matter must stand over" by the Minister for Defence, Sir John Forrest, nothing came of it. In September, 1903, an important communication was received from the British Government advising adoption by the British Army of the "Short Magazine Lee-Enfield Rifle", described briefly as a shorter, lighter, and much improved version of the Magazine rifle introduced some ten years previously. The "Colonial Governments" were advised that a proportion of the manufacturing programme was being allocated for their requirements, and they were requested to place their orders as early as possible against deliveries likely to be available about the third quarter of 1904. A subsequent paper gave details of the improvements, and there was also a table of firing tests against samples of the rifles in use by the European Powers to prove the superiority of the new British rifle. After this there was another pause for twelve months except that mention should be made of representations which came from an entirely external source;

the Progress Association of Lithgow, New South Wales, through Mr. Joseph Cook, M.P., (who became Minister for Defence in 1909-1910), as to the suitability of their town as a site for a Small Arms Factory. It is not known how these people became aware, in 1903, of the possibility of rifle manufacture in Australia, but certainly they were prescient, and enterprising too, as will be shown in the next chapter. There were similar representations a year later, in September, 1904, this time with the practical support of Mr. William Sandford, at the time busy in developing the Lithgow Ironworks, subsequently to be removed to Port Kembla and known as Australian Iron and Steel Limited. To Mr. Sandford must be given the credit, I think, for the location of the Small Arms Factory at Lithgow, and his original letter therefore should be placed on record -

FROM THE "TELEGRAM" (SYDNEY) OF 17.9.04
GENERAL HUTTON HAS BROUGHT UNDER NOTICE
OF THE MINISTER OF DEFENCE THE
PROSPECT OF ESTABLISHING A

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and Mr. McCay is now going into the matter with a view to submitting it to the Cabinet.

You know that for years, I have been advocating this very question, and believing as I do, that the Factory should be situated where it can be defended, I know a spot which appears to me, can be made impregnable

The spot I mention can be connected by rail with the Great Western Railway Main-Line, with a bountiful supply of water. Five acres of land should be sufficient for all time. I cannot sell the land, but I would agree to lease five acres for 999 years, and agree to supply the Coal at a low price of 5/- per ton on trucks at pits mouth, about a mile from the Factory. If wages are advanced, the price of Coal to go up accordingly.

The Factory would be connected by a siding with the Rolling Mills and Siemens open hearth Furnace, where all the iron and steel could be made on the spot of the sort, quality and quantity wanted. It could also be connected by a Siding not a mile distant, where the Copper Works of the Great Cobar Co. are situated, and the purest Electrolytic Copper is being turned out today. It would also be connected with the Copper Works of the Lloyd Copper Co. where refined copper has been treated.

I think the Municipal Council should give special facilities for this Factory.

In a subsequent letter, Mr. Sandford added that he would "also give the necessary land for a railway siding and construct the line suitable to Government engines and connect same with Eakbank Railway Station at my own expense". Mr. Sandford's mention of his former advocacy did not mean that he had been urging the Department to do anything; it had reference to the time when he was promoting the establishment of the Ironworks at Lithgow, when he indulged in propaganda to the effect that "here some day should be the Birmingham of Australia making all its requirements of iron and steel, and here too when the time comes should be our arsenals" and so on, which moves one to recall, without in any way deprecating the ideas and good intentions of Mr. Sandford, that while the factory was placed at Lithgow largely as a result of his propaganda, the steel works are no longer there, the Great Cobar works and the Lloyd Copper works were closed down not long after the Small Arms Factory commenced operations there, the coal requirement is negligible and electricity has had to be drawn from Port Kembla

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SIEMENS

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with a view to the local power generating plant. Furthermore

unimportant. Finally the Lithgow Municipal Council has never done anything in the way of special facilities for the factory. In short, practically everything has gone from Lithgow, leaving only the Small Arms Factory, and so far from it being impregnable, it is practically a "sitting shot" from the air because of the enclosed valley. Other representations relative to sites were also received: an area near Hartley, no great distance from Lithgow being one, and the Municipality of Wentworth was also alert to the possibilities; it will be recalled that this town first put forward a claim for consideration in 1888.

It was not until July, 1906, however, that anything decisive is recorded, but there is a paper on the file presented by the Chief of Ordnance (Lt. Col. H. Le Mesurier), dated 10th November, 1905, which suggests that discussions were taking place; it being shown that there was a requirement of 40,600 Magazine rifles, of which provision for 8,000 had been made on the Estimates 1905-06. In July, the action taken appears to have been on the initiative of Mr. Thos. Playford, then Minister for Defence, by way of an instruction in his own almost illegible writing, for a telegram to be sent to London -

At your earliest convenience send estimate of cost of Small Arms Factory together with particulars of output and details of working expenses.

The reply to his cablegram was on information supplied by Greenwood and Batley Ltd. of Leeds -

The economic unit would be a factory to make 50-60 rifles daily say 16,000 rifles with bayonets and scabbards, and the cost for machinery and plant would be -

Manufacturing equipment	£60,340
Power plant	5,710
	<u>£66,050.</u>

The Staff recommended was -

- 1 Superintendent (civilian or military), 1 Manager
- 1 Assistant Manager and 10 Clerks

21 Foremen and 450 operators.

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the size, standard design of gun or piece of the nature or leading parts to be specialists

from Europe or America. Most of the operators would be unskilled men or boys but 30 would have to be skilled mechanics.

← No estimate of cost of land and buildings was given. X

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On receipt, Mr. Playford sent this correspondence to the Military Board to be exhaustively examined and reported upon according to costs of land and buildings, operating costs, statistics of requirements and wastages, stocks on hand, etc. but there is no record of a report by the Military Board, unless some comments by the Chief Accountant of the Department, who was also Finance Member of the Military Board were to take its place. Mr. Thompson worked out costs of salaries and wages for the personnel noted above and estimated costs of materials and shop charges which brought out a cost per rifle of £4.19.10.½ about 10/- higher than the landed cost from England. He pointed to the locomotives being built by the Victorian Railways at costs lower than the imported costs as evidence that the assumptions were reasonable subject to efficient management by the staff, and generally he was favourable to the proposal. I can say from personal knowledge that Mr. Thompson was held in high esteem for his ability and judgement; he was accepted as an authority upon finance and accountancy, and it is certain that his word carried weight. After this the question of rifle manufacture once more became dormant for a while and I will leave it to be taken up again in the next chapter. Meanwhile, we can give some space to the developments at the Small Arms Ammunition Factory, Footscray, during the early years of Federation.

The Colonial Ammunition Company

It will be recollected that in April, 1902, Major-General Hutton, General Officer Commanding, had

advocated a Government factory in preference to an extension of the existing contract with the Colonial Ammunition Company for ".303" rifle ammunition. In his report of 29th April, 1902, to the Minister on the proposals of General Hutton, the Secretary of the Defence Department, Captain Collins, did not contest the proposals, but he suggested that the capital expenditure upon and the costs of operation of a Government factory would be more than could be considered at the moment and that it would be better in the circumstances to utilise the already existing facilities at Footscray for the ammunition, and at the Nobel works at Deer Park when a new pattern of Cordite had been determined. That, however, was as far as the matter was carried at the time but it was raised again with the receipt of a letter from the English directors of the Company in November 1902 wherein they referred to their meeting with the Prime Minister, Sir Edmund Barton, in London, with whom they renewed their former proposals. Sir John Forrest thereupon submitted to the Prime Minister a repetition of his own proposals of the previous April, to which he added clauses requiring the Company to -

maintain reserve stocks of metal the equivalent of 10,000,000 cartridges,

provide machinery for making the ignition caps,

agree to the Commonwealth having an option of instructing the Company to erect rolling mills and foundry for production of the metal components.

The Prime Minister endorsed this memorandum: "Agree to proposal for five years".

The letter from the London directors of the Colonial Ammunition Coy. also contained a suggestion that the Deer Park works of the Nobel Explosives Coy.

(Australian Explosives and Chemical Coy.) could be associated with the Ammunition Coy. in supply of the Cordite which would

be necessary for the much larger Commonwealth requirements of

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- 03/5452
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ARRANGEMENT
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 TO SECURE THE
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the Commonwealth was not prepared to take any action in the matter at present "especially in view of the fact that there appears to be a possibility that some modification of this explosive for military purposes may be decided upon". The A.E.C. Company again wrote on 20th January, 1903, when a representative of the parent Company, who was visiting Australia, put in comprehensive proposals, but after some delay it was advised on 24th August, 1903: "it was not proposed to enter into an agreement at present".

That positive statement however applied only to the explosive, because on 2nd March, 1903, a draft proposed agreement for a period of five years was sent to the Colonial Ammunition Company as a basis for discussion and also to the General Officer Commanding for comments. General Hutton repeated his suggestions and the arguments already outlined, and urged that it should be obligatory on the Company to set up rolling mills, but nothing else of importance was adduced. As for the Company, it accepted a number of clauses and contested others, and the discussion went on for months in regard to some items; it seemed that an impasse had been reached and that there was general acceptance to leave matters in abeyance for the time being, except that agreement was reached on one item, dealing specifically with a question of reserve stocks of materials, and signed on 10th April 1905. This was followed on 16th June, 1906, by a further agreement in the same connection, the effect being that the Commonwealth had purchased stocks of materials equivalent to 10,000,000 cartridges and was holding them in store as a reserve with provision that they could be drawn upon regularly by the Company by way of supplement to its own bulk stocks on the condition that when such issues were drawn by the Company replacements would be ordered immediately from England by the Company so that the reserve of 10,000,000 component parts would be continuously

assuring that at all times there were at hand sufficient manufacturing materials to carry on the factory for twelve months despite any stoppages that might occur through loss of a shipment or industrial troubles - or even enemy action. In a subsequent paragraph it is stated that Mr. C.N. Hoke and Engineer-Commander W. Clarkson has been asked to make certain enquiries abroad (May, 1907) in connection with the manufacture of Cordite and Rifles. Mr. Hake was requested also to enquire as to the cost of establishing and operating a small arms ammunition factory inclusive of production of all the component materials then being imported: brass and nickel cups, paper wads, Fulminate of Mercury cap composition, etc. After his arrival in England, Mr. Hake suggested that whereas his assistant, Mr. Marcus Bell, could deal with the paper wads and the cap composition, (that item of his instructions would be more appropriate for an engineer and that it should be taken over by Commander Clarkson. This was agreed, and some months later Commander Clarkson forwarded a quotation from Greenwood and Batley for ammunition factory plant -

Power Plant : Two steam Turbo-Generators for 300 Kilowatts -	£5,020
.303" Cartridge Case and Bullet plant with loading equipment -	27,137
Rolling Mill Plant and Furnaces, etc. -	15,980.

The Minister of Defence, Mr. Thomas Ewing, made a significant comment upon this quotation when it was presented to him -

Tenders will have to be called for all these things if we go on. Same applies to the Small Arms Factory. Maybe these estimates are in the top note. What is the offer of the Colonial Ammunition Company.

Mr. Ewing was personally responsible for much of the drive being put in about this time to Defence developments and the comment was taken by the Department as an indicator that the Government was in earnest in the formulation of an effective Defence policy. As to the Minister's question, a pencilled note by the Secretary of the Department,

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ARRIVED
FROM AN OFFER
MADE BY THE
COMPANY DIRECT
TO THE PRIME
MINISTER (Mr. Denker)
HE HAD BEEN
IN ENGLAND.

familiar in the proposals from the Company and it is unnecessary to repeat it here, but the consideration which it might have received in what was now becoming a favourable atmosphere was diverted for the time being by an intrusion from an unexpected quarter.

note
Mint-Cartridge Factory *

Two officials of the Royal Mint in Melbourne, Messrs. Corbet and McCay, being aware of the dependence of the Footscray factory, and consequently the Commonwealth Defence Department, upon England for the brass and nickel cups required in the manufacture of ammunition, had conceived the idea that the blanks for these could be made in the Mint upon the coin making machinery, and that the metal strip used as the raw material for the blanks could be melted in the Mint furnaces and rolled on the Mint Rolling Mills; that so much being done, it needed only "capping" machines, at comparatively small expenditure to produce the "cups", as they would be taken over by the ammunition factory. It was claimed that as the Mint had staff already well informed in the fabrication of non-ferrous metals, as well as certain coin making plant which had periods of idle time, it would be an economy to place such manufactures with the Mint rather than set up a duplicate production equipment at the Footscray factory. The matter became the subject of public interest, and even controversy upon such grounds as that it would be unwise from the Defence standpoint to rely upon an external authority which must give preference to its own needs at all times, and could possibly fail to adequately supply what was a fundamental military requirement in times of emergency; that the technique of manufacture, although similar in a physical appearance as regards the stages up to "Blanking" was most exacting as regards the "capping" process and moreover

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fired from the rifles; in short that the manufacture of the cups was even affected by the ballistics. It was argued by the opponents of the idea that it might as well have been suggested that there was a similarity with cartridge manufacture in the processes of coinage production, but that did not warrant cartridge manufacturers in assuming a knowledge of the wear and tear to be expected in respect of the metallic money in circulation, and that in short each industry should be left to manage its own business and concentrate upon the responsibilities attached to making a success of that. It is interesting in this connection to record that during World War II, because of a shortage of copper coins, the smelting and "blanking" equipment of the Footscray Ammunition Factory was utilised for a short time in producing copper alloy "blanks" for the Royal Mint. The proposal for a Mint-Cartridge factory was referred finally for consideration by an expert committee consisting of Professor David Orme Masson, Chair of Chemistry in the University of Melbourne, Mr. E. Stanfield Wardell, Deputy Master of the Mint, and Professor T.R. Lyle and Mr. Geo. Higgins, also of the University of Melbourne, and they recommended on 15th June, 1908, that the Mint and the Footscray ammunition factory should be each charged with the responsibility of producing only the "blanks" appropriate for the products for which they had been established. The Committee also recommended that the brass and cupro-nickel cups should be made in Australia and not imported, and that this could be arranged without extra cost to Government provided that the Colonial Ammunition Company be granted an extension of their lease. This report brought matters to a head ultimately, in that an agreement was gazetted on 11th June, 1910, whereby the Company, in consideration of grant of a 99 year lease of land at Gordon Street, Footscray, undertook to erect thereon metal rolling mills with the accessory

so that in the final result, the .303" small arms ammunition was being made wholly in Australia before the outbreak of the war of 1914-1918. With this, the story of the development, over a period of two decades, of the Colonial Ammunition Company's small arms ammunition factory at Footscray, Victoria, is completed, but the record should not be closed without reference to a matter of considerable importance during the time of its occurrence and which developed some questioning as to the quality of the ammunition being manufactured by the Company.

Defective Ammunition

In August, 1904, it was reported to the Military Board that a .303" Magazine rifle had burst during rifle practice on the Port Melbourne Rifle Range. This was followed by a similar accident three months later ~~by a similar accident~~ at the Williamstown Rifle Range, Victoria. In 1905 five similar accidents occurred in New South Wales and others of a like nature were reported in Victoria. The succession of incidents were exhaustively examined by Military Boards of Inquiry without positive results but in general the conclusions were framed as pointing to defective ammunition made by the Colonial Ammunition Company. The papers and the exhibits were then handed to Mr. C.N. Hake for examination and he formed a different opinion: "that by some means the cartridges must have become double bulleted." The matter was then referred to a Committee: Mr. Hake with Dr. Thomas Lyle, Professor of Natural Philosophy of the University of Melbourne, for detailed investigation and experiment and they proved ultimately that Mr. Hake's theories were sound. It was also discovered that double bulleting was possible with the machines in use at the factory (an automatic process), and on reference to the British authorities it was ascertained that similar errors had been discovered

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the possibilities had been countered by the use of automatic machines for accurately weighing single cartridges separately, as well as weighing them again in packets of ten. These machines were installed in due course and also the machines for feeding the bullets to the cartridges were provided with devices whereby the error could not recur. Finally all the ammunition in the possession of the Department and of the Services was withdrawn and re-weighed with the result that over 100 double bulletted cartridges were discovered. It may be opportune to mention here that the writer had a place in an incident which took place in the United States in 1910 which is associated in his mind with the double bulleting here recorded. It was at a demonstration of the Maxim Silencer, invented by Mr. Hudson Maxim, for muffling the sound of rifle firing; the inventor at the time being employed at the works of the Colt Patent Firearms Coy., Hartford, Conn. U.S.A. I knew something about the Maxim Silencer, it had been brought to the notice of the Department of Defence before I left Australia (on the business of the Small Arms Factory), and I was interested in seeing it in use (although it was not adopted ultimately because it interfered with the ballistics of the ammunition). One shot was fired successfully with a much reduced noise of explosion, and then a second one, but this time I noticed something different in the sound of explosion, merely a "phut", although the others present, including Mr. Maxim, made no observation, and I, of course, could say nothing in my ignorance of sound and effect as applied to silencers. It did however bring to my memory our experience in 1904-05, in Australia, of bullets remaining in the barrel, and whereas I had been standing with the muzzle of the rifle in line with my ear, I stepped back a couple of paces in an unobstrusive manner; the trigger was pulled for the third shot; there was

a loud explosion; the slinger shot off the barrel and the barrel split like a sliced radish. It was clear to me what had happened: the second bullet either had not left the barrel, or the cartridge had been double-bulleted and the second bullet had stayed in the barrel, and thus the barrel had exploded when the third cartridge was fired. The point is that if I had stayed in my original position I must have received the bursting of the barrel right in my ear!

It will be convenient also to mention here another matter which excited considerable discussion during 1910 and 1911 and might have become important; the introduction in England of a new design of .303" ammunition, the principal features of which were a longer range and a lower trajectory, gained by use of a pointed bullet. The adoption of this ammunition would have necessitated changes in the rifle and a different type of cordite, so that the respective factories, of which the cordite and rifle factories were still under construction, would have been hindered in their development and manufacturing programmes at the time when production was most needed: Universal Military Training, was in course of being organised. The ~~matter drifted~~ ^{result was that} ~~along somewhat for a time~~ and nothing conclusive had been done up to the outbreak of war in August, 1914, ~~(and so it remained during the war.~~ ^{correct this see SAA)}

~~chapter 4~~

[Handwritten signature]

*Millburne
21 December 1964*