

1882.  

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VICTORIA.

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REPORTS AND SUGGESTIONS RELATIVE TO THE  
DEFENCES OF VICTORIA;

CONSISTING OF—

1. MEMORANDUM BY COLONEL P. H. SCRATCHLEY, C.M.G., ROYAL ENGINEERS.
2. SUGGESTIONS BY MAJOR ELLERY AND COLONEL SCRATCHLEY RELATIVE TO REORGANIZATION OF TORPEDO CORPS.
3. REPORT ON PERMANENT ARTILLERY BY ACTING COMMANDANT OF LOCAL FORCES.
4. REPORT ON VOLUNTEER ORGANIZATION BY ACTING COMMANDANT OF LOCAL FORCES.

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PRESENTED TO BOTH HOUSES OF PARLIAMENT BY HIS EXCELLENCY'S COMMAND.

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# DEFENCES OF VICTORIA.

## No. 1.

MEMORANDUM BY COLONEL P. H. SCRATCHLEY, C.M.G.,  
ROYAL ENGINEERS.

### I.—*Present state of affairs.*

As considerable misconception appears to exist on the subject of the Land Defences, I think it is desirable to lay before the Government a brief statement of the present state of affairs, together with recommendations as to the steps to be taken to complete the scheme of defence, recommended by Sir W. Jervois, and adopted by the Government of Victoria in 1877.

It may be mentioned in passing that, in March 1879, Sir W. Jervois, in a letter addressed to the Governor, modified certain portions of the scheme submitted in 1877, in consequence of his having found, when in England during the year 1878, that great improvements had been made in the manufacture of, and modes of mounting, ordnance, &c.

My Progress Reports of the 1st April 1880, and of the 15th July 1881, show in detail the several works carried out or at present in progress, and the recommendations submitted by me from time to time Fide Schedule E. for the consideration of the Government.

The state of affairs at the present time may be summed up as follows :—

(1) *Point Nepean*.—No steps taken nor funds provided for commencing permanent work. Temporary battery for four 80-pounders quite unserviceable.

(2) *Queenscliff*.—(a) Two batteries (to be armed with three 9-inch and four 80-pounder rifled guns) nearly completed. 80-pounders mounted. Waiting for gear and ironwork from England for the 9-inch gun platforms; platforms could be altered in a month after receipt of gear and guns mounted.

(b) Defensible wall and barrack keep not provided for in the estimates; work could be commenced at once.

(3) *Swan Island*.—(a) Battery partly completed; right-face ready for two 9-inch and one 80-pounder rifled guns. Waiting for gear for platforms, as in the case of 9-inch guns at Queenscliff. Contract in progress for works to mount one additional 9-inch and two 80-pounder rifled guns, and for completion of earth-works of battery.

(b) Stockade, Blockhouse barrack, and Torpedo Dépôt, can be proceeded with at any time.

(4) *South Channel Fort*.—Stone rubble ring deposited round site selected for fort. No further progress.

(5) *Torpedo Defences for South and West Channels*.—No progress.

## II.—*Cause of the small progress made.*

The cause of the small progress made in carrying out Sir William Jervois' scheme of defence is entirely due to the absence of the necessary authority from the Government to proceed with the works during the years 1877-78 and 1878-79, and to the insufficiency of the amounts voted during the years 1879-80, 1880-81, and 1881-82. This will be seen on reference to the schedule, annexed to this memorandum, showing amounts voted and expended in each year.

## III.—*Additional Floating Defences proposed.*

Having in view that it would take several years to construct the South Channel Fort, according to the original design proposed by Sir W. Jervois, and that it would be unwise to commence such a large and important work until a loan had been authorized for the purpose, it is necessary to consider what steps should be taken in the meantime to prevent hostile vessels passing up the South Channel.

Sir W. Jervois intended that the *Cerberus*, and a swift gun vessel, together with torpedo boats, should guard this channel pending the completion of the fort. The gun vessel and torpedo boats not having been provided, and the submarine defences for the channels not having been organized, there is a general impression that it would be unwise to leave to the *Cerberus* alone the defence of the channel. It is, therefore, proposed to provide additional floating defences, in the shape of gun boats and fast torpedo boats.

Provided these gun-boats and torpedo-boats are of the latest designs, of patterns that have been proved to be successful, and the gun-boats are armed with the most recent type of breech-loading guns, the proposal should certainly be adopted.

It should be observed that Sir W. Jervois has never opposed the employment of *floating* defences in their proper sphere. In his Report of 1877 (pages 12 and 13), the advantages attending the adoption of *fixed* defences, such as forts and batteries, were fully discussed. Floating defences are known to be very costly to maintain—the *Cerberus*, for example; they require periodical repairs; they are liable to be disabled by accidents, to which fixed defences are not exposed. Gun-boats being unarmoured can be sunk by the enemy's fire, or by the action of his offensive torpedoes. Forts and batteries are practically indestructible, and cost an insignificant sum to maintain. They are always present when wanted.

## IV.—*Necessity for a Fort in South Channel.*

Whatever may be provided in the shape of additional floating defences, the necessity for some *fixed* defence for the South Channel must continue—which will serve, at the same time, the purpose of a *point d'appui* for the submarine mines. I am preparing a modified design for the fort, which has been suggested to me by Sir W. Jervois, whereby a very large saving on the original estimate will be effected.\*

\* Fort since designed and estimated to cost £80,000, inclusive of armament; it could be constructed in two years.

V.—*Completion of remainder of scheme.*

As to the remainder of the scheme of defence, I recommend that it should be completed, as modified with Sir W. Jervois' concurrence, and that the fort in the South Channel should be erected on a reduced scale. A schedule is annexed showing in detail what remains to be done, *Vide Schedule A* together with estimates of cost.

VI.—*Torpedo Defences for West and South Channels.*

I must allude especially to the subject of Torpedo Defences for the channels. Sir W. Jervois intended them to be part and parcel of the fixed defences on shore, and controlled by a special corps—organized for the purpose—under the military commander; as it is a paramount necessity that the artillery in the batteries and the submarine mines in the water should be controlled by one and the same authority. To place the defensive torpedoes under the charge of the Naval commander, whose operations would be apart from the shore defences, is opposed to the practice of the Imperial Service and most foreign nations—notably the United States, where defensive torpedoes are separated from offensive torpedoes, and are considered to be of equal importance with guns in shore batteries.\*

I must positively assert that the present arrangements cannot be relied upon, as they are not in the hands of trained men, and, so far as I can ascertain, they are of an elementary and haphazard character, and not established on any well considered plan. To rely upon such arrangements must, in my opinion, inevitably lead to disaster and an utter collapse of a most important portion of the defences, second only in value to the artillery on shore and afloat.

VII.—*Teachings of recent wars as to the value of submarine mines.*

The numerous instances in which submarine mines, in competent and experienced hands, have been successfully employed, and have exerted an important influence on naval operations, are familiar to every student of the wars of the last twenty years.

\* Major-General T. L. Gallwey, to Colonel Scratchley, C.M.G.

Sir,

War Office, Horse Guards, Whitehall, 24 August 1880.

I have the honor to inform you that it has been decided, after careful deliberation and discussion between the Admiralty and the War Department, that *defensive* submarine mines are in charge of the Military, and *offensive* torpedoes are in charge of the Navy; the reasons being that the former must be disposed in connection with the artillery defence of the waters they protect; the mines being made up on shore, the testing and observing arrangements being from shore, and the mines themselves being fired from shore by command of the officer conducting the military defence, whereas offensive torpedoes are at present employed only from ships and launches forming portions of naval flotillas.

The duties of rowing-guard naturally devolve upon the Navy where naval means are available; but such duty is independent of the laying and firing of sub-marine mines, and need in no measure interfere with them.

*This division obtains also in the United States.*

No increased expense will follow upon the above arrangement.

The submarine mining boat equipment *must* be maintained for submarine mining operations in independence of naval requirements, and will not in time of war be available for anything else; it being of the utmost importance to the successful defence of fortified harbours that submarine mines should be as ready for action as guns, and that the two should come into action conjointly.

I have, &c.,

T. L. GALLWEY,  
Major-General, Royal Engineers,  
Inspector-General of Fortifications,

If we examine the records of the American War of Secession, we find that no less than 9 ironclads, carrying 48 guns; 14 steamers, armed with 56 guns; 3 transports and 53 boats—all belonging to the Federal Navy—were either destroyed or put *hors de combat* by the Confederate defensive torpedoes, which, when compared with the submarine mines of the present day, were crude and ineffective appliances.

Again, in 1865, in the war between Denmark and the allied powers, Prussia and Austria; in 1864–68, in the war between Paraguay and Brazil; in 1870–71, during the Franco-German war; and in 1877–78, during the Russo-Turkish war, the influence exercised by defensive submarine mines was most marked, and in numerous instances they paralyzed the naval operations.

When we see every nation in the world adopting submarine mines as a part of their harbor defences, and when it is admitted that batteries alone will not prevent ships passing up the channels, it appears to be a complete waste of time to question their value for Port Phillip.

VIII.—*Immediate action recommended.*

Sir W. Jervois submitted, in 1877, a comprehensive scheme of defence, comprising measures on shore and afloat, for repelling the attack of a hostile squadron on Port Phillip. Although the scheme was approved at the time by the Government, a portion only has been executed, and several of the most important recommendations have been entirely disregarded or ignored, notwithstanding my repeated appeals for further consideration. In order that the portion executed may be given its full value, the remainder of the recommendations must be adopted. By introducing certain modifications, with the sanction of Sir W. Jervois, considerable reductions in the estimated cost of the works have been effected. All I require is authority to proceed and funds to be provided. I respectfully urge upon the Government that the time has arrived for a final decision to be given.

20th March 1882.

P. H. SCRATCHLEY,  
Colonel, R.E.

SCHEDULES ACCOMPANYING MEMORANDUM.

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*Schedule A.*—Statement relating to Sir W. Jervois' scheme, showing modifications, progress to date, proposed measures for completion, and estimates of cost.

*Schedule B.*—Recommendations as to the steps to be taken for completing the scheme of land defences.

*Schedule C.*—Statement showing original and present cost of the scheme.

*Schedule D.*—Amounts voted and expended for five years (1877-8 to 1881-2), and detail of expenditure.

*Schedule E.*—Copies of Progress Reports, dated 15th July 1881, and 1st April 1880.

## SCHEDULE

STATEMENT showing Sir W. Jervois' recommendations, the modifications introduced, the progress made

Sir William Jervois' Recommendations as modified with his authority.		Modified Plan adopted 1st April 1880.
<b>LAND DEFENCES.</b>		
<i>Heads.</i>		
1. Enclosed work on Point Nepean, to fire on entrance, inside and outside Heads	To be armed with four large and two 80-pr. rifled guns	Armament six 80-prs., four to be replaced with heavier guns
2. Battery and keep at Queenscliff, to fire on entrance, command anchorage and approach to West Channel	To be armed with one 10-inch, three 9-inch, and four 80-pr. rifled guns	One 10-inch gun, keep, and defensible enclosure to be deferred for present
<i>West Channel.</i>		
3. Enclosed work on Swan Island, to guard channel and submarine mines	To be armed with two 10-inch, three 9-inch, and three 80-pr. rifled guns. Torpedo depôt to be provided	Two 10-inch guns, barrack, and torpedo depôt to be deferred for present
<i>South Channel.</i>		
4. Fort on shoal, to guard channel and submarine mines	To be armed with five 10-inch and two 6-inch rifled guns	No modification proposed
<i>General.</i>		
4 a. Contingencies ... ..	... ..	... ..
4 b. Miscellaneous works ... ..	... ..	... ..
<b>TORPEDO DEFENCES.</b>		
5. { West Channel ... .. { South Channel ... ..	Lines of observation and contact mines, with light booms, to be laid across the channels Torpedo defences to be in the charge of the military authorities.	} No modification proposed
5 a. Equipment and ammunition for ordnance in batteries.—New guns for field artillery	... ..	
<b>MILITARY FORCES.</b>		
6. Regular Artillery Corps ... ..	... ..	} ... ..
7. Coast and Volunteer Artillery	Required for manning the batteries, 200 of the Regular Artillery and 400 of the Auxiliary Artillery ... ..	
8. Torpedo Corps ... ..	For defence of channels, 100 officers and men ... ..	
9. Field force to repel landings	2,000 officers and men— Cavalry } Artillery } Engineers } Infantry }	} No modification proposed
<hr/>		
<b>NAVAL DEFENCES.</b>		
10. <i>Cerberus</i> ... ..	In "peace time" to be maintained at a cost of £10,000	... ..
11. "Swift Gun-vessel" ... ..	To take the place of the <i>Victoria</i> and <i>Nelson</i>	... ..
<hr/>		
<b>OUT PORTS.</b>		
<i>Warrnambool, Belfast, and Portland.</i>		
12. Battery and small artillery force at each port	Each battery to be armed with five 80-pr.* guns, requiring 100 Volunteer Artillery at each place	No modification proposed

\* Ten 80-pounders and five 68-pounders are available,



## A.

to March 1882, and the further works, &c., required to complete; together with estimates of cost.

Progress to March 1882.	Measures now proposed and required to complete—	Estimated Cost.		Remarks.
		£	£	
1. Modified plan not carried out. Temporary sand-bag battery for four 80-prs. now unserviceable	(a) Reconstruction of battery for six 80-pr. guns, with enclosure, magazines, and barrack	(a) 12,000		28,000
	(b) Mount one 10-inch rifled gun at salient in a cupola	(b) 16,000		
2. The upper and lower batteries completed; four 80-pr. guns mounted; three 9-inch guns will shortly be mounted	(c) Provide walled enclosure and barrack keep	(c) 8,000		18,000
	(d) Mount one 10-inch rifled gun in vacant space	(d) 10,000		
3. Right-face and earthwork of outer portions of battery executed, left face and completion of battery in progress	(e) Provide torpedo depôt, keep, and stockade round battery	(e) 10,500		30,500
	(f) Mount two 10-inch rifled guns on right face in vacant space reserved for them, and two machine guns	(f) 20,000		
4. Stone rubble ring laid round site of fort	(g) Tower for two 10-inch rifled guns in cupolas, easemates for two 6-inch rifled guns, three machine guns on roof	(g) ...	80,000	
4 a. ... ..	(h) To meet unforeseen expenditure	(h) ...	10,000	
4 b. ... ..	(i) Road between Queenscliff and Swan Island, torpedo establishment at Williamstown, defensive position to cut off Queenscliff	(i) ...	3,000	
5. No progress ... ..	(k) Provide torpedo stores, equipment, boats, &c.	(k) ...	20,000	
5 a. Not yet arranged for ...	(l) Equipment and ammunition ...	(l) 5,000		7,500
	(m) Four 13-pr. B.L. field guns ...	(m) 2,500		
6. Disbanded ... ..	(n) 200 Regular Artillery—120 in peace time, 80 or more in reserve	(n) £100 per head in ranks, £20 per head in reserve		(n) 50 officers and men should be placed in each of the four works of defence on the outbreak of war.
7. Volunteer Garrison Artillery available	(o) 400 Volunteer Militia Artillery	(o) £13 per head ...		(o) Calculated on the South Australian paid militia system.
8. No progress ... ..	(p) 90 Torpedo Corps ... ..	(p) £20 per head ...		(p) Calculated on the naval reserve system.
9. Volunteer force available	(q) 2,000 Volunteer Militia ...	(q) £13 per head ...		(q) Calculated on the South Australian paid system.
10. ... ..	... ..	... ..		
11. ... ..	... ..	... ..		
12. No progress ... ..	(r) Construct batteries at Portland, Belfast, and Warrnambool	(r) £18,000		(s) Calculated on the South Australian paid system.
	(s) Volunteer Militia Artillery—100 at each port	(s) £13 per head ...		

## SCHEDULE B.

### RECOMMENDATIONS AND STEPS TO BE TAKEN TO COMPLETE SCHEME OF DEFENCE, AS LAID DOWN IN SCHEDULE A.

- (1) *Armaments*.—(a) *Point Nepean*—One 10-inch rifled gun to be ordered.  
 (b) *Swan Island*—Two 10-inch rifled guns and two machine guns to be ordered.  
 (c) *Queenscliff*—One 10-inch rifled gun to be ordered.  
 (d) *South Channel*—Two 10-inch and two 6-inch rifled guns and three machine guns to be ordered.
- (2) *Field Guns*.—Four 13-pounder breech-loading field guns, complete, to be ordered.
- (3) *Ammunition*.—Shot, shell, &c., as per list already furnished, to be ordered.
- (4) *Torpedo Stores*.—Cable, gun cotton, and electrical stores (not procurable in colony), to be ordered from England. Other stores and appliances to be made in Melbourne. Before doing this, stock should be taken of materials and appliances now in hand.
- (5) *Works*.—The following to be authorized :—  
 (a) Wall and keep at Queenscliff.  
 (b) Stockade, torpedo depôt, and barrack, at Swan Island.  
 (c) Re-construction of battery at Point Nepean, and erection of enclosure and barrack.  
 (d) Execution of other works to proceed by contracts, to be completed by the time the guns, if ordered, would arrive in colony.  
 (e) Batteries at outports to be commenced, when plans have been prepared.
6. *Military Forces*.—(a) Military Torpedo Corps, as recommended by Sir W. Jervois, to be at once organized ; charge of the submarine defences of both channels to be transferred to the corps—which should be composed of electricians, mechanics, and boatmen, the latter to be recruited from fishermen at Queenscliff.  
 (b) Permanent Artillery Corps to be re-established.

## SCHEDULE C.

### ORIGINAL AND REVISED ESTIMATES FOR SCHEME OF COAST DEFENCES.

(1) Sir W. Jervois' original estimate—				
(a) For Port Phillip	...	...	...	£350,000
(b) For Western Ports	...	...	...	30,000
(including works, armaments, and torpedo defences)				£380,000
(2) Revised estimates (20 March 1882)—				
(a) Expended on Swan Island, Queenscliff, and South Channel, including 1881-2	...	...	...	£45,163
(b) To complete—in order to mount guns in colony—Swan Island, Queenscliff, and Point Nepean	...	...	...	30,500
(c) For works and additional guns—Swan Island, Queenscliff, and Point Nepean	...	...	...	49,000
(d) South Channel fort	...	...	...	80,000
(e) Torpedo defences	...	...	...	20,000
(f) Battery of field guns	...	...	...	2,500
(g) Completing reserves of ammunition	...	...	...	5,000
(h) Batteries at Western Ports	...	...	...	18,000
(i) Contingencies, allow	...	...	...	10,000
Total				£260,163
Deduct expended on Swan Island, Queenscliff, and South Channel, including this year, 1881-2				45,163
Balance required				£215,000

N.B.—It will be seen that a saving of £120,000 is effected on the original estimate, which will more than cover the expenditure on gun-boats and torpedo-boats.

## SCHEDULE D.

AMOUNTS VOTED AND EXPENDED FROM 1877-8 TO 1881-2 ON NAVAL AND MILITARY DEFENCES, *EXCLUSIVE* OF ANNUAL ESTIMATES FOR NAVAL AND MILITARY FORCES.

	Voted.		Expenditure.
1877-8 ...	£100,000	...	£34,289 11 5
1878-9 ...	£65,711	...	£19,388 11 11
1879-80 ...	£18,350	...	£15,698 5 8
1880-1 ...	£23,000	...	£19,783 19 4
1881-2 ...	£31,000	...	£31,000 0 0 <sup>(1)</sup>
Totals	£238,061	...	£120,160 8 4

## RECAPITULATION.

Naval Expenditure ...	...	£54,083
Military, Miscellaneous ...	...	£9,318
Coast Batteries ...	...	£45,163
<i>(Of which sum £10,621 for South Channel fort.)</i>		
Temporary batteries ...	...	£1,400
Preliminary expenses, salaries, surveys, &c. ...	...	£10,197
Total	...	£120,161

## DETAIL OF FOREGOING EXPENDITURE OF £120,161.

Subdivisions.	Expenditure.	Totals.	Grand Total.
	£	£	£
<b>NAVAL.</b>			
<i>Nelson</i> —Cutting down, &c. ...	21,037		
<i>Cerberus</i> —Boilers ...	8,000		
Naval Armaments and Torpedo Stores ...	25,046		
	54,083		
		54,083	54,083
<b>MILITARY.</b>			
Steamer for Military Torpedo Corps ...	1,668		
Rifles, &c., for Military Forces ...	6,000		
Armaments for Batteries ...	1,650 <sup>(2)</sup>		
		1,650	9,318
<b>COAST BATTERIES.</b>			
<i>Temporary</i> ...	1,400	1,400	1,400
<i>Permanent</i> —Queenscliff ...	12,886		
„ Swan Island ...	21,656	34,542	
„ South Channel ...	8,687		
Broken metal for South Channel ( <i>available for works</i> )	1,934	10,621	45,163
Preliminary expenses, including Sir W. Jervois' mission, salaries, contingencies, surveys, borings, &c., &c. ...	10,197	10,197	10,197
Grand Total ...	...	...	£120,161

<sup>(1)</sup> The expenditure for 1881-2 is estimated, the amount voted being taken as all expended.<sup>(2)</sup> Gear and racers for 9-inch gun platforms.

## SCHEDULE E.

COPIES OF PROGRESS REPORTS DATED 15TH JULY 1881 AND  
1ST APRIL 1880.

COPY OF MEMORANDUM ACCOMPANYING  
**PROGRESS REPORT,**

DATED 15TH JULY 1881.

1. From the accompanying statement (Enclosure B) it will be seen that, since the 1st April 1880, the date of my last Report, some progress has been made with the defensive works recommended by Sir W. Jervois for Port Phillip, on the modified plan then approved.

2. Two batteries at Queenscliff—the lower one for four 80-pounder rifled guns, the upper for three 9-inch 12-ton rifled guns—have been nearly completed. The fittings of magazines, and the erection of an artillery store and laboratory shed, should be proceeded with at an early date. The 80-pounders have been mounted; the 9-inch guns will be placed in position when the traversing platforms and racers are ready.\* A space has been left in the upper battery for a new pattern 10-inch gun of 25 tons. This gun, the defensible enclosure, and barrack keep can be added whenever funds are available.

3. The battery on Swan Island, which has been designed for two new pattern 10-inch, three 9-inch, and three 80-pounder rifled guns, was commenced last year with the labor of the “unemployed.” The earth-work of the two front faces and two flanks was well advanced when the men were withdrawn. A contract for the right face, which is to be armed with two 9-inch guns and one 80-pounder gun, is now in progress. The site for the battery has also been enclosed. When funds are available the left face—to be armed with one 9-inch and two 80-pounder guns—the flanks, and rear face should be constructed. The torpedo depôt, the defensible keep, and the two 10-inch guns can be added in the future.

4. Seeds have been sown at Queenscliff and Swan Island batteries, in order to encourage the growth of scrub, &c., and thus screen the guns and batteries, as much as possible, from the enemy’s view; and trees are being planted to break the sky line in rear of the guns.

5. No further progress has been made with the South Channel Fort, and the temporary sand-bag battery on Point Nepean has been left untouched, as it will require considerable repairs and alteration if it be decided to maintain it. Nothing has been done with regard to the torpedo defences.

6. The foregoing is a brief statement of the state of affairs at the present date, so far as batteries and torpedoes are concerned. It is necessary now to consider what further steps should be taken. Following the plan laid down in April 1880—viz., that the defences for the entrance, the anchorage within the Heads, and the West Channel

\* In order that the 9-inch guns may be mounted according to the modern method, the traversing platforms have to be altered. A set of trucks, ironwork, and gear for one platform was ordered last year from England, and may be expected next month. When received, the remaining five platforms will be altered in the colony, if practicable; if not, the materials will have to be ordered from England. The delay which has occurred in this matter is unavoidable.

should first be completed, in order to utilize the guns in the colony—I recommend that provision be made this financial year for the under-mentioned works (Enclosure A):—

- (a.) *Queenscliff Batteries*.—Fittings to magazines, erection of artillery store and laboratory shed.
- (b.) *Swan Island Battery*.—Construction of left face of battery to mount one 9-inch and two 80-pounder guns; completion of flanks and rear face; fittings to magazines, artillery store, &c.
- (c.) *Point Nepean*.—Reconstruction of existing temporary battery for four 80-pounders, addition of sea-face for two 80-pounders, and a magazine.
- (d.) *9-inch Rifled Guns for Queenscliff and Swan Island*.—The traversing platforms for the six 9-inch guns in the colony to be altered, the necessary racers provided, and the guns mounted.
- (e.) *Armaments*.—Provision for the necessary gun ammunition and stores, in order to complete the reserves necessary for the equipment of the ordnance in the batteries.

7. It should be observed that the defence of the South Channel is set aside for separate consideration. The expenditure necessary for the construction of the South Channel Fort, its armament and the torpedo defences, amounting to close upon £250,000, is so large as to raise the question whether the funds for this portion of Sir William Jervois' scheme of defence should not be provided by a special loan. At the same time, if the construction of the work be indefinitely postponed, it might be desirable to provide a torpedo station on the site for the fort, which could be made defensible, and armed with three 80-pounder guns. These guns would only guard the torpedo defences. The *Cerberus* would take the place of the fort, and fight the enemy's vessels attempting to force a passage. The cost of the station and torpedo defences would probably be £35,000.

8. I have already stated that no progress has been made with the torpedo defences; either by the purchase of the necessary plant and stores, or by the organization of the Military Torpedo Corps. It is to be distinctly understood that, without these submarine defences, the batteries now being constructed will not prevent an enemy's vessels passing up the channels. Consequently the consideration of these matters cannot be much longer delayed. Torpedo defences cannot be extemporized, for the simple reason that suitable explosives and electrical cables cannot be procured in the colony, and, in the event of war, could not be obtained from England. The delay in the formation of a Military Torpedo Corps, as recommended by Sir W. Jervois, is becoming very serious. Success will depend entirely upon the efficiency of such a corps. This efficiency can only be attained by constant drill and practice. Much experience and knowledge could have been gained during the last three years by a moderate expenditure on experiments under the direction of competent officers. I am, however, powerless to assist in the matter, owing to there being no funds available for the purpose.

9. I do not propose in this Report to do more than refer to the necessity for artillerymen to take charge of the batteries in time of peace, and to man them in time of war, as the question will no doubt receive attention. I may quote, however, the opinion on the subject of the recent Royal Commission on the Military Defences of New South Wales:—  
“In time of peace, the care and guarding of the guns, magazines, and

appliances demand the presence at all times of a skilled and disciplined body of men, and at the outbreak of hostilities, however efficient and numerous the Volunteer Force may be, a large percentage of thoroughly competent and highly-drilled soldiers is necessary for the working of each gun. In a matter of this kind an error on the side of false economy might be fatal. It must never be forgotten that the artillery placed in position will not answer the purpose intended unless handled with the utmost skill and precision attainable. Universal experience has shown that this skill and precision can be secured only by careful and continued drill as a business, and not by occasional exercise, differing very little from a pastime. The fully instructed artilleryman is in reality an artisan of a high order, and time, habit, and systematic teaching are necessary to make him thoroughly competent."

10. For convenience of reference and comparison, the memorandum accompanying my Progress Report of the 1st April is annexed to this paper (Enclosure C).

Public Works Office, 15th July 1881.

P. H. SCRATCHLEY,  
Colonel R.E.

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## ENCLOSURE A.

## ESTIMATES, 1881-2.

THE sum of £30,000 is required for the undermentioned Works and Armaments :—

I. **QUEENSCLIFF**.—Batteries *on modified plan* for an armament of three 9-inch guns and four 80-pounders.

Fittings of magazines and artillery store ; laboratory shed ; additional artillery store ; completion of emplacements ; alteration of traversing platforms for three 9-inch guns ; sundry appliances for service of guns and magazines.

II. **SWAN ISLAND**.—Battery *on modified plan* for an armament of three 9-inch guns and three 80-pounders.

Completion of right face of battery, fittings of magazines and artillery stores ; laboratory shed ; alteration of traversing platforms for three 9-inch guns ; completion of left face, flanks, and rear, including fittings, &c.

III. **POINT NEPEAN**.—Reconstruction of existing temporary batteries, and completion *on modified plan* for six 80-pounder rifled guns.

IV. **ARMAMENTS**.—Purchase of shot, shell, and warlike stores, to complete the equipment of—six 9-inch and thirteen 80-pounder rifled guns in the batteries.

V. Salaries, surveys, superintendence, and contingencies for one year.

ENCLOSURE

DEFENCES OF VICTORIA.—

Sir William Jervois' Recommendations.		Modified Plan adopted, 1st April 1880.
<b>LAND DEFENCES.</b>		
<i>Heads.</i>		
1. Enclosed work on Point Nepean ...	To be armed with four large and two 80-pr. rifled guns	Armament six 80-prs., four to be replaced with heavier guns
2. Batteries and keep at Queenscliff ...	To be armed with one 10-inch, three 9-inch, and four 80-pr. rifled guns	One 10-inch gun, keep, and defensible enclosure to be deferred
<i>West Channel.</i>		
3. Enclosed work on Swan Island ...	To be armed with two 10-inch, three 9-inch, and three 80-pr. rifled guns. Torpedo depôt to be provided	Two 10-inch guns, keep, and torpedo depôt to be deferred
<i>South Channel.</i>		
4. Fort on shoal ... ..	To be armed with five 10-inch and two 6-inch rifled guns	No modification proposed
<b>TORPEDO DEFENCES.</b>		
5. { West Channel ... .. { South Channel... ..	{ Lines of observation and contact mines, with light booms, to be laid across the channels { Torpedo defences to be in charge of the military authorities	{ No modification proposed
<b>MILITARY FORCES.</b>		
6. Regular Artillery Corps ...	} Required for manning the batteries, 200 of the Regular Artillery and 400 of the Auxilliary Artillery	} ... ..
7. Coast and Volunteer Artillery		
8. Torpedo Corps ... ..	For defence of channels, 100 officers and men ...	} No modification proposed
9. Field force to repel landings ...	2,000 officers and men— Cavalry } Artillery } Engineers } Infantry }	
	... ..	
<b>NAVAL DEFENCES.</b>		
10. <i>Cerberus</i> ... ..	In "peace time" to be maintained at a cost of £10,000	
11. "Swift Gun-vessel" ... ..	To take the place of the <i>Victoria</i> and <i>Nelson</i>	
<b>OUTPORTS.</b>		
<i>Warrnambool, Belfast, and Portland.</i>		
12. Battery and small artillery force at each port	Each battery to be armed with five 80-pr. guns, requiring 100 Volunteer Artillery at each place	No modification proposed



## B.

## PROGRESS REPORT to the 15th July 1881.

Progress made up to 1st April 1880.	Progress made up to 15th July 1881, and Proposals for the Year 1881-2.
<p>The two 80-prs. are in the colony. The four large guns will have to be purchased. A very incomplete and temporary battery for four 80-prs. has been constructed on Point Nepean. It will require frequent repair</p> <p>With the exception of one 10-inch rifle gun, the rest of the armament is ready when the platforms for the 9-inch guns have been altered. Money voted for placing the four 80-prs. in position. Plans are ready for remainder of battery</p> <p>Swan Island purchased. Plans ready to commence work. Three 9-inch and three 80-pr. rifled guns in the colony. Two 10-inch guns will have ultimately to be ordered from England</p> <p>Stone rubble deposited round site of fort. The whole of the armament will have to be ordered from England</p> <p>Some portion of plant in store. Since the transfer of the torpedo defences for the South and West Channels to the Naval Department I have no knowledge whatever of what is proposed, or whether any arrangements have been made, for these torpedo defences. Nor do I know what stores and appliances are at present in the colony.</p> <p>Present strength of Regular Artillery 113 officers and men. The Volunteer Artillery is available</p> <p>Since the transfer of the torpedo defences for the channels to the Naval Department, no progress has been made in the organization and training of the Torpedo Corps. Present strength 30 officers and men</p> <p>Volunteer Force of sufficient strength to furnish the field force</p>	<p>As the present battery, armed with four 80-pr. guns, is only of a temporary character, and requires renewal, it is proposed to reconstruct the work on a modified plan, to receive an armament of six 80-prs. These guns can be replaced by more powerful ordnance in the future.</p> <p>The upper and lower batteries have been constructed, and it only remains to complete fittings of magazines, &amp;c. Four 80-prs. have been mounted in lower battery. When patterns come from England the traversing platforms for the three 9-inch guns can be altered and the guns mounted. The 10-inch gun, keep, and defensible enclosure can be added in the future.</p> <p>The right face of battery for two 9-inch guns and one 80-pr. now in course of construction. A considerable portion of the earthwork of left face and flanks executed. It is proposed to complete the left face, for one 9-inch and two 80-prs., the flanks, and rear face, leaving the keep, torpedo depôt, and two 10-inch guns to be added hereafter. Traversing platforms for 9-inch guns will also be altered.</p>
	<p>No progress since last report.</p>
	<p>No progress since last report.</p>
	<p>Regular Artillery has been disbanded.</p> <p>No progress since last report.</p>
	<p>No progress since last report.</p>
<p>Artillery Volunteers enrolled at each port, but no steps taken to commence batteries. Armaments in the colony</p>	<p>No progress since last report.</p>

## ENCLOSURE C.

COPY OF MEMORANDUM WHICH ACCOMPANIED PROGRESS REPORT  
DATED 1st APRIL 1880.

The questions referred to me to-day by the Honorable the Commissioner of Public Works, may be briefly stated to be as follows :—

1st. What can, without delay, be done to provide for the best possible defence with the means at present available, and at what cost ?

2nd. What is the present state of the defence affairs of the colony ?

For all practical purposes, at the present time, the Government would have to rely upon the *Cerberus* and the *Nelson* for the defence of Port Phillip, for—although the four 80-prs. mounted on Point Nepean (in a sandbag battery), and the four 80-prs. in the old battery at Queenscliff, would be of considerable service—the six 9-inch rifled guns, which are in the colony, have not been utilized.

I should explain that three of these 9-inch guns were placed temporarily in position, some time ago, at Queenscliff, on their old platforms. They have since been removed, in order to make room for the permanent work recommended by Sir W. Jervois, and to permit of their platforms being altered to the modern pattern.

As a matter of fact, the only portion of Sir W. Jervois' scheme which has been commenced, is the South Channel fort, on which an expenditure of £9,000 has been incurred. The purchase of Swan Island has also been completed.

At the same time plans have been prepared for at least two years' work on the South Channel fort, and for the batteries at Queenscliff and on Swan Island ; consequently the Public Works Department is ready to proceed on receiving authority. Moreover, there is at present a balance of about £5,000 available on a vote taken this year for defence works.

With regard to the Torpedo Defences, I am unable to give any information, for—although they are part and parcel of the defensive works—so far as the plant for *defence* is concerned, it has been handed over to, and incorporated with, the Naval Forces. Nor have I any means of ascertaining what torpedo stores and appliances for defensive purposes are at present in the colony. I should here point out that Sir W. Jervois has urged very strongly that all *defensive* torpedo arrangements should be under the *military* commander—as in England and elsewhere—and that the *naval* commander should be restricted to the torpedo arrangements for *offence*.

I observe, in a recent report furnished by the officer commanding the Naval Forces, for transmission to England through Sir W. Jervois, that mention is made of a plan for torpedo defence. Of the nature of this plan I am ignorant. It is scarcely necessary to remark that any independent plan for such torpedo defences, which varied from that approved by Sir W. Jervois in connection with the defensive works, would vitiate the whole of the scheme and absolutely render the expenditure thereon useless.

In fact, the point, which must force itself prominently on the notice of every one, is the entire absence of any *central* professional head or responsible adviser for the defence organization of the colony. The "theatre" of operations for the defence of Port Phillip will be altogether too circumscribed to require, or to admit of, any independent action on the part of the naval and military commanders.

If efficiency is desired, it can best be attained by establishing a central authority—well acquainted with the requirements and resources of both branches of the defence—to advise the Government, but not to interfere in any way with the executive duties of the commanders, nor to relieve them of their entire responsibility.

The serious danger has evidently been overlooked of not having everything carefully thought out and settled between the naval and military authorities, and approved by Government, *in time of peace*. In this manner only will the Government be prepared to act with promptitude and decision—and without confusion—in *time of war*.

The course which, therefore, I recommend should be adopted under the present circumstances, without waiting for any change in the defence organization, is as follows :—

- (a.) To lose no time in mounting the guns that are available—viz., six 9-inch and eight 80-prs.—in such a way that, whatever works are carried out now, they will form an integral part of the works recommended by Sir W. Jervois. This can be done by placing three 9-inch guns and four 80-prs. at Queenscliff, and three 9-inch and four 80-prs. on Swan Island, in both cases behind permanent parapets, forming part of the designs approved by Sir W. Jervois.
- (b.) To organize the torpedo defences in accordance with Sir W. Jervois' recommendations, purchasing such additional stores as may be required for the defence of the South and West Channels.

By following this course it will be possible to provide, within the next twelve months, something reliable and definite in the defence preparations. The entrance to the port, the anchorage within the Heads, and the West Channel will be reasonably defended, although not to the full extent considered necessary by Sir W. Jervois. The *Cerberus* and *Nelson* will be available for the defence of the South Channel, until the fort, now commenced, is completed.

The time required for the completion of Sir W. Jervois' scheme will depend upon the mode in which it may be proposed to proceed. The batteries on Swan Island and at Queenscliff could be completed in twelve months, from date of contract, and the South Channel fort would require from three to four years; but when its foundations are brought up to the level of the magazine floor, a temporary torpedo firing station could be constructed, in case of emergency, without interfering with the progress of the works.

The estimated cost of mounting the guns at Queenscliff and on Swan Island, as now proposed, will be £30,000. The additional sum necessary for the torpedo defences cannot be estimated until the stock in hand is ascertained. Until I know whether any of the guns, ordered for the *Nelson*, can be made available for the South Channel and Point Nepean, I cannot state what the total cost of Sir W. Jervois' scheme will be.

To give immediate effect to the recommendations now submitted, the following steps are necessary:—

- (a) To sanction the expenditure of the balance, available on this year's vote, in commencing the battery at Queenscliff, so as to mount four 80-prs., and in preparing for the works on Swan Island.
- (b) To prepare for contracts for the remainder of the battery at Queenscliff and for the Swan Island work to the extent of £30,000, in order to commence these works immediately the money is available.
- (c) To call for a return of the torpedo stores in the colony, and of those which have been ordered from England.
- (d) To call for a similar return as regards the guns, &c., ordered from England.
- (e) To organize the torpedo defences, and the Torpedo Corps, in the manner recommended by Sir W. Jervois.

The practical object which I have in view, in submitting this memorandum, is to show how the defensive appliances (guns, torpedoes, &c.)—now in the colony—can be immediately utilized with the best effect, and to separate, for more special consideration, the question as to the best mode of carrying out the whole of the scheme recommended by Sir W. Jervois.

Public Works Office, 6/4/80.

P. H. SCRATCHLEY,  
Colonel R.E.

## No. 2.

SUGGESTIONS BY MAJOR ELLERY AND COLONEL SCRATCHLEY  
RELATIVE TO REORGANIZATION OF TORPEDO CORPS.

No. 82/60.

*From the Acting Commandant to the Under Treasurer.*

SIR,

Head Quarters, Melbourne, 14th April 1882.

No. 2738,  
1st April /82.

Referring to your letter, number and date as per margin, I have the honor to forward herewith suggestions by Major Ellery, relative to the establishment of a Torpedo and Signal Corps on a sound basis.

2. I received these suggestions on the 3rd inst., and have carefully considered them before submitting for the consideration of the Hon. the Treasurer. I also referred the same to Colonel Scratchley, whose remarks thereon I attach.

3. The only addition that I could suggest to Major Ellery's propositions was that the instructor and storekeeper should be procured from the Torpedo School at Chatham; the appointment of a thoroughly qualified man for this office I look upon as most important, and in this Major Ellery agreed, and added a foot-note to that effect. It will be seen by Colonel Scratchley's letter that he also fully concurs in this recommendation.

Having consulted with the above-mentioned officers, in accordance with the directions contained in your letter before quoted, and we being all in thorough accord, I beg to urge that, if the Hon. the Treasurer approves, I may be authorized to take the necessary steps to establish the Torpedo Corps upon the basis submitted, with the least possible delay; and also, that I may be favored with a return of the torpedo material and stores in charge of the Naval Force available for torpedo defence, and which can be transferred to this department for the proposed corps.

I have the honor to be, Sir,

Your most obedient servant,

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

SIR,

Observatory, 3rd April 1882.

I have the honor to acknowledge your letter of the 31st March, relative to the "establishment of a Torpedo and Signal Corps on a sound basis," and in reply thereto I have appended suggestions as to the method I propose for reorganizing and maintaining an effective corps for torpedo defence.

In submitting these suggestions, I beg to state that they are based upon a scheme in accordance with Sir W. Jervois' proposals, which was submitted and accepted by the Commandant in 1878. This scheme, however, is modified in some details to meet present conditions.

As I assume that the Government desire that a permanent corps for torpedo defence should be organized, which will become effective in a short period, I, as well as the senior officers of the present Torpedo and Signal Corps with whom I have conferred on the subject, am firmly of opinion that it will be absolutely necessary, in order to secure the requisite training, that there shall be compulsory attendance at daylight drills, and that therefore the corps should be established under the "Discipline Act," and every member sworn in for a certain period. This, of course, will involve an annual cost for payment.

The strength of corps, and payment of members proposed, are in accordance with former suggestions, and much on the same scale as that which has been in force in New South Wales for several years past.

For the training of the corps, a torpedo-laying steamer, such as was built in 1878, with several row boats, will be absolutely necessary, and these must be fitted and reserved solely for the torpedo service, so as to be continually available for practice.

I shall be prepared to give a list of appliances, apparatus, and stores that it is necessary to obtain, as soon as I know what are already available in the colony.

I have the honor to be, Sir,

Your most obedient servant,

The Commandant.

ROB. L. J. ELLERY.

## MEMORANDUM.

The following suggestions refer solely to *defensive* as distinct from *offensive* torpedoes, and appliances.

A very clear distinction on this point is desirable, and it will be absolutely necessary that everything pertaining to fixed torpedoes for the defence of our channels shall be kept separate from *offensive* torpedoes, or such as it may be necessary to improvise for the temporary protection of floating defences; and that all stores, appliances, &c., fixed or floating, for training or actual torpedo defence, shall, as is the case of Great Britain and the other colonies, pertain solely at all times to the Defensive Torpedo Corps it is now proposed to organize.

*Suggestions.*

1. That a Defensive Torpedo Corps, of from 80 to 100 officers and men, be organized under the "Discipline Act."

This force should consist of three sections, namely:—Scientific, artizan, and boatman sections. The first section is already available in the present Torpedo and Signal Corps; the second can be readily raised in and around Melbourne; and the third from among seafaring men, and the fishermen in and around Queenscliff.

The suggested constitution of this corps is appended.

For the training of this corps, I propose there should be weekly drills at a depôt to be formed at Williamstown, and quarterly practice in the channels to be defended. As the part of the boat section which may be raised at Queenscliff could not well attend the weekly drills at Williamstown, it will be necessary to make special arrangements for drilling such members at Swan Island in the intervals between quarterly drills.

2. That a training depôt be formed at Williamstown, where there should be the requisite appliances for practice in all branches of the work. These must comprise a shed and yard for fitting up torpedoes prior to their removal to Swan Island depôt, a torpedo-laying steamer, one or two boats, &c.

3. The main depôt at Swan Island should provide for the storage of the cables as well as the torpedoes and fittings, and also of the necessary stock of gun-cotton.

4. That the material and appliances necessary to carry out a torpedo defence of the West and South Channels on the modified scheme at present contemplated should be at once procured by importation from England or manufacture in the colony, and that, in order to determine what is still required, that I be furnished with a list of all torpedo material for defensive operations now in possession of the Government.

5. That all the necessary material and appliances shall be placed under the charge of the reorganized Torpedo and Signal Corps.

6. That drawings and specifications for all such material and appliances as can be economically and efficiently made in the colony be prepared, and tenders called for the immediate supply of the same.

#### SUGGESTED CONSTITUTION OF THE REORGANIZED TORPEDO AND SIGNAL CORPS.

1 Major Commanding	...	...	...	per annum	...	£150
2 Captains	...	...	...	at £60	„	120
3 Lieutenants	...	...	...	at £40	„	120
5 Sergeants	...	...	...	at £20	„	100
3 Corporals	...	...	...	at £15	„	45
20 Scientific Section Electricians, &c.	...	...	...	at £16	„	320
50 Privates, viz.:						
25 Artizans	}	...	...	at £12	„	600
25 Boatmen						
1 Bugler	...	...	...	at £12	„	12
1 Drill Instructor and Storekeeper	...	...	...	at 10s. per day	...	180
1 Coxswain	...	...	...	at 7s. 6d. per day	...	138
Uniforms	...	...	...	...	...	150
Contingent Expenses	...	...	...	...	...	200
						£2,135

This force might be increased to 100 strong in times of preparing for defence by being supplemented by 13 rank and file of the Permanent Artillery, who might also assist, in time of peace, in the care and maintenance of the Torpedo Depôt at Swan Island.

N.B.—It is very desirable that the drill instructor and storekeeper be obtained from the Torpedo School at Chatham.

#### [ADDENDUM.]

#### MILITARY TORPEDO CORPS.

No. 82/176.—14/4.

Public Works Office, Melbourne, 3rd April 1882.

SIR,

1. Having carefully considered and discussed with Major Ellery all matters connected with the reorganization of the Military Torpedo Corps required for Sir W. Jervois' scheme of defence for Port Phillip, I have the honor to state as follows:—

2. The proposals and recommendations contained in Major Ellery's report of this date should be approved and given effect to. The organization and composition of the corps proposed, and the arrangements suggested, will provide an efficient and reliable force for establishing, working, and maintaining the scheme of submarine defences recommended by Sir William Jervois and myself.

3. By detailing a small detachment of the proposed Artillery Corps to take charge of and keep in order the stores and equipment in time of peace, and, in time of war, to assist the Torpedo Corps in their duties, efficiency and economy will be attained, and the connection which must exist between the artillery and torpedo defences will be ensured.

4. I recommend that a sum of £300 be set apart each year in the Military Estimates for the wear and tear of stores and for experimental purposes, &c., in connection with the training of the corps in their duties.

5. Provision will have to be made for the expenses connected with the training of the corps, such as food, transport, housing, and other expenditure.

6. A non-commissioned officer of Royal Engineers should be procured without delay from England, to undertake the duties of instructor and storekeeper.

7. Provision has been made for one in the Works estimates submitted for the consideration of the Honorable the Treasurer for the torpedo depôt on Swan Island battery, and for the training establishment at Williamstown.

I have the honor to be, Sir,

Your obedient servant,

P. H. SCRATCHLEY,

Colonel R. E.

## No. 3.

REPORT ON PERMANENT ARTILLERY BY ACTING COMMANDANT  
OF LOCAL FORCES.

No. 82/77.

*From the Acting Commandant to the Under Treasurer.*

SIR,

Head Quarters, Melbourne, 1st May 1882.

I have the honor to acknowledge the receipt this day of your letter of the 29th ult., No. 3687. asking that the Honorable the Treasurer may be furnished, as speedily as possible, with reports on:— 1st. Permanent Artillery; 2nd. Torpedo Corps; and 3rd. Volunteer Organization—and, in reply, to inform you that I have just completed my recommendations relative to the first (Artillery Corps), which I forward herewith for consideration.

2. With reference to the second (Torpedo Corps), I beg to draw your attention to my letter of the 14th ult., No. 82/60, forwarding reports from Colonel Scratchley, C.M.G., and Major Ellery on the subject, the views of those gentlemen being fully endorsed by me.

3. Not having previously been asked to report upon the 3rd (Volunteer Organization), I am not prepared with a report thereon, but will take the matter into immediate consideration, and lay my views before the Hon. the Treasurer without delay.

I have the honor to be, Sir,  
Your obedient humble servant,

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

No. 82/78.

*From the Acting Commandant to the Honorable the Treasurer.*

SIR,

Head Quarters, Melbourne, 1st May 1882.

I have the honor to report that, after carefully inspecting the defence works in course of construction at the Heads (Port Phillip Bay), I am deeply impressed with the necessity of immediately providing a sufficient number of artillerymen for the care of the said works, and for the purpose of being trained to the use of and maintaining the valuable guns now and hereafter to be mounted therein, together with the warlike stores, in a state of efficiency. With this view, I beg most strongly to recommend the establishment of a battery of garrison artillery as follows:—

- 1 Major at £365 per annum.
- 1 Captain at £300 per annum.
- 2 Lieutenants at £250 per annum.
- 1 Battery Sergeant-Major at 9s. per day.
- 5 Sergeants at 6s. 6d. per day.
- 5 Corporals at 5s. 6d. per day.
- 5 Bombardiers at 5s. per day.
- 2 Trumpeters at 4s. per day.
- 103 Gunners at 4s. per day.

Total, 125 all ranks, with quarters, fuel, light, and water.

I may here remark that, in recommending the above number as the strength of the battery, I have been guided by the necessity of limiting the expenditure to meet the present requirements, but, as the works are completed and the guns mounted therein, an increase will be necessary—the amount of such increase can be left for future consideration.

*Contingencies, Allowances, &c.*

- Allowance for the provision of uniform to officers on appointment, £50 each.
- Command allowance to officer commanding the battery, 1s. 6d. per day.
- Allowance to officer acting as barrack and quarter master, for the battery only, 1s. 6d. per day.
- Allowance to a non-commissioned officer acting as barrack, pay, and quarter master sergeant, 1s. 6d. per day.
- Allowance to one orderly-room clerk, 1s. per day.
- Allowance to hospital cook and wardman, at 2s. 6d. per day, and assistant wardman, when required, 6d. per day.
- Non-commissioned officers, trumpeters, and gunners—a free kit on joining, and annually one suit of uniform and two pairs of boots each.
- Lodging allowance for limited number of married men not provided with quarters in barracks, or on detachment duty.
- Allowance for the services of a medical officer, £200 per annum.

*Conditions of Service.*

Recruits to be sworn in under the "Discipline Act 1870," to be not less than 19 nor more than 30 years of age, minimum height 5 feet 8 inches, chest measurement not less than 35 inches, of good character, able to read and write fairly, and to pass medical examination. Men recently discharged from the Imperial service, under 45 years of age, and men with special qualifications may be enlisted if approved by the Commandant, Local Forces.

The number of married men to be admitted into the corps to be limited.

Sixpence (6d.) per day of the pay of all non-commissioned officers, trumpeters, and gunners to be retained and placed in a "Deferred Pay Fund," to be drawn on termination of engagement or on retirement with good character. Men dismissed for misconduct, or discharged at their own request, prior to completing term of engagement, to forfeit all claim on the "Deferred Pay Fund."

It is to be distinctly understood that no man shall have a right to quit the battery until the expiration of his term of service, but a man of good character may, if approved by the Officer Commanding the Forces, be permitted to purchase his discharge during the first year of service for the sum of £20, during the second year for the sum of £10, and thereafter may be granted a free discharge.

In every case of discharge, except for disability, or reduction of establishment, or on completion of the full term of service, deferred pay to be forfeited.

The commanding officer to be responsible that the men be properly rationed, that at all times they are in possession of the regulation kits, and that such kits be kept in good order and condition; that the cost of such rations, kits, &c., be deducted from the pay of the men, and that with the money accruing from such deductions he shall pay all accounts for supplies chargeable to the men.

*Estimate of Cost.*

Pay for 125, all ranks, including contingencies, allowances, &c., probable annual amount, £12,500. The pay to the gunners is made up as follows:—

						s.	d.
Daily pay	...	...	...	...	...	2	6
Messing allowance	...	...	...	...	...	1	0
Deferred pay	...	...	...	...	...	0	6
						<hr/>	
Total	...	...	...	...	...	4	0 per day.

By giving the men messing allowance in lieu of free rations, the cost of a separate staff of commissariat non-commissioned officers is saved, and the men derive the benefit of the allowance when on leave, detached duty, &c.

I would point out that, prior to establishing the battery it is absolutely necessary that that portion of the Victoria Barracks called the Immigrants' Home, now occupied by a number of decrepid and old men, should be handed over to the Military Department, in which case I do not think there will be any necessity to again move the Police Dépôt, provided that the Police Department do not require more of the buildings, &c., than is at present in their possession.

Subsequent to the establishment of the Artillery Corps as heretofore recommended, I would suggest the consideration of a scheme for the creation of a "Reserve" Artillery Corps, to which men on leaving the battery could be transferred, if intending to reside in or near Melbourne, or such other centres of population as may be determined—being paid an allowance of £10 or £12 per annum, and mustering periodically for drill; but as under the present proposed term of service in the battery, a period of five years must elapse before men would be eligible for the "Reserve," the details of the scheme can be postponed for future consideration.

I have the honor to be, Sir,

Your most obedient servant,

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

## No. 4.

REPORT ON VOLUNTEER ORGANIZATION BY ACTING  
COMMANDANT OF LOCAL FORCES.

No. 82/91.

SIR,

Head Quarters, Victoria Barracks, 19th May 1882.

No. 3687, 29th  
April 1882.

Referring to your letter, number and date as per margin, asking for a report "on the Permanent Artillery Torpedo Corps and Volunteer Organization," I, having previously submitted reports on the two first questions, have now the honor to forward for the consideration of the Hon. the Treasurer my views with respect to the latter.

2. Immediately upon the receipt of the above instructions I deemed it advisable to invite the officers of the Volunteer Force to submit, in writing, by the 15th inst., any suggestions they might have to make relative to the subject of the reorganization of that force, in response to which I have received, and carefully studied, a large number of papers, many of them containing very valuable ideas, and nearly all in their main principles agree with my proposition.

3. In considering the subject, I have, as in the case of the Permanent Artillery Corps, been guided by the necessity of keeping the expenditure within reasonable limits, and at the same time place the force to be raised (hereinafter called the Volunteer Militia) upon a sound basis, both of which objects, I venture to submit, will be attained by the scheme I propose.

4. Should the necessity arise, and money be voted therefor, the number of batteries and companies of the different regiments could be increased at a comparatively small addition to the working expenses (*i.e.* regimental staff).

5. Avoiding minor details, which will be subject to regulations to be framed after the adoption of this or any other scheme of organization, the following is, as briefly as possible, my recommendation for the establishment of a Volunteer Militia:—

1st. The consolidation of corps in certain localities into regiments, each under one command, with staff of instructors.

2nd. These regiments to be placed under the "Discipline Act" as "occasionally employed," and to be paid for certain parades, drills, &c., as hereafter set forth.

6. The Volunteer Militia to consist of the following branches:—

*Artillery.*—One Regiment of:

2 Field Batteries ... .. 100 rank and file each.

6 Garrison " ... .. 100 " "

*Corps of Engineers.*—1 Company ... .. 100 " "

*Infantry.*—One Regiment of 2 Battalions:

1st Battalion (Metropolitan) 6 Companies ... 100 rank and file each.

2nd " (Country) 4 Companies ... 100 " "

With due proportion of officers and sergeants to each.

7. The localities in which I propose to raise these regiments are as follows:—

Melbourne and Suburbs:

2 Batteries Field Artillery.

1 Company Engineers.

6 Companies Infantry.

Emerald Hill ... 1 Battery Garrison Artillery.

Williamstown ... 1 " " "

Footscray ... 1 " " "

Geelong ... 2 " " "

Queenscliff } 1 " " "

Drysdale } 1 " " "

Ballarat ... 2 Companies Infantry.

Sandhurst ... 1 " "

Castlemaine ... 1 " "

8. The Volunteer Corps in the above-named localities to be disbanded. All Government property handed over to the Military authorities for re-issue to the Volunteer Militia. Those men desirous of joining to be enrolled in the Volunteer Militia, if found to be physically fit.

9. Recruits to be enrolled only between the ages of 19 and 45. Minimum height to be—for Artillery, 5 ft. 7 in.; for Infantry, 5 ft. 6 in., with proportionate chest measurement, and to pass medical examination.

10. Period of service to be for three years, with option of re-enrolling, if not above the age of 45 years. Permission to retire to be allowed under certain circumstances on money payment or deduction from accrued pay equivalent to expenses on account of such member retiring, with additional fine as may be provided in regulations.

11. Officers and non-commissioned officers to be appointed from those of the disbanded Volunteer Corps who may tender their services. New appointments and promotions to be made after examination.



12. A medical department to be established under a principal medical officer with an assistant, both to be paid fixed annual amounts. The other medical officers to be paid, when detailed for duty, at the same rate as the combatant officers of their relative ranks, at per day.

13. *Work to be performed—*

*Recruits*—52 hours drill before passing into the ranks, within three months of joining, unless sooner passed by the adjutant of the regiment.

To be classed as an "Efficient" (annually)—

(a.) Twenty battalion, company, or battery drills of not less than one hour each, either day or night, one hour attendance at an instruction lecture to count as a company or battery drill.

(b.) Annual course of musketry instruction for all, except field officers.

(c.) Pass at an official inspection at one of the daylight parades (*d* or *e*.)

For every man complying with the above, the officer commanding the company to which he belongs to draw £2 10s. for maintenance of uniform, drill rooms, incidentals, &c., &c.

*Payment Parades.*

(d.) Six (6) days continuous training, at 10s. per day ... ..	£3 0 0
(e.) Twelve (12) half-days daylight drills, at 5s. each ... ..	3 0 0
(f.) Two (2) special daylight parades, whole days, at 10s. per day ...	1 0 0
4 of the 6 days continuous training, and 8 of the 12 half-days must be attended, and the duties laid down in <i>a</i> , <i>b</i> , and <i>c</i> performed, when a bonus will be granted of ... ..	3 0 0
Total ... ..	£10 0 0

Officers and non-commissioned officers to be paid in like proportions to the amount of pay as per estimates; for example, a captain at £30, attends *d*, *e*, *f*—

14 days at 30s. ... ..	£21 0 0
Bonus ... ..	9 0 0
	£30 0 0

14. Fines to be inflicted for non-attendance at daylight parades, without reasonable excuse, to be deducted from pay.

15. I propose that the Imperial Government should be asked to detach from their regiments, for a period of five years, two young and suitable officers for appointment as adjutants to the artillery and infantry.

16. Volunteer Force—

I would submit for the consideration of the Government the desirability of retaining the services of the Volunteer Corps in those localities not affected by the proposed militia, upon the same terms, conditions, and allowances, &c., as at present, limiting them to the following establishments:—

The Victoria Volunteer Light Horse—			
Metropolitan Troop ... ..	...	...	30
Kyneton Troop ... ..	...	...	30
Sandhurst Troop ... ..	...	...	30
Ballarat Troop ... ..	...	...	30
Southern (Dandenong) Troop ... ..	...	...	30
Castlemaine Troop ... ..	...	...	30
			180
Artillery—Field Battery—St. Kilda ... ..			
Garrison—Portland ... ..	...	...	50
Belfast ... ..	...	...	50
Warrnambool ... ..	...	...	50
			150
Infantry—Creswick ... ..			
Clunes ... ..	...	...	50
Maldon ... ..	...	...	50
Kyneton ... ..	...	...	50
Malmsbury ... ..	...	...	50
			250
Total ... ..			680

17. I attach an estimate in detail of the maximum annual cost of the Volunteer Militia, but I may remark that the actual expenditure will probably be less than the total shown, as it may fairly be assumed that, from various causes, many men will, at different times, be unavoidably absent from parade, in which case their pay will be saved.

18. I have also added a summary of the estimates for the several branches of the Military Forces.

I have the honor to be, Sir,

Your obedient humble servant,

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

ESTIMATE of the Annual Amount required for the Maintenance of the proposed force of Volunteer Militia, consisting of :—

2 batteries Field Artillery	...	...	each	100	rank and file.
6 batteries Garrison Artillery	...	...	"	100	"
1 company of Engineers	...	...	...	100	"
2 battalions of Infantry, 10 companies	...	...	each	100	"
With due proportion of officers and sergeants	...	Total		2,110	men, all ranks.

ROYAL VICTORIA REGIMENT OF VOLUNTEER MILITIA.

CONSISTING OF 2 FIELD AND 6 GARRISON BATTERIES.

				Per annum.	
1	Lieut.-Colonel Commanding Artillery	...	...	£70	
<i>Field Artillery.</i>					
2	Majors, at £40	...	...	80	
2	Captains, at £30	...	...	60	
6	Lieutenants, at £20	...	...	120	
2	Battery Sergeant-Majors, at £15	...	...	30	
8	Sergeants, at £14	...	...	112	
10	Corporals, at £12	...	...	120	
10	Bombardiers, at £11	...	...	110	
2	Trumpeters, at £10	...	...	20	
178	Gunners, at £10	...	...	1,780	
220				2,502	
<i>Garrison Artillery.</i>					
6	Majors, at £40	...	...	240	
6	Captains, at £30	...	...	180	
18	Lieutenants, at £20	...	...	360	
6	Battery Sergeant-Majors, at £15	...	...	90	
24	Sergeants, at £14	...	...	336	
30	Corporals, at £12	...	...	360	
30	Bombardiers, at £11	...	...	330	
6	Trumpeters, at £10	...	...	60	
534	Gunners, at £10	...	...	5,340	
660				7,296	
<i>Artillery Staff (Permanent).</i>					
1	Adjutant—Pay and Quarter Master (including horse allowance) with fuel, light, and quarters	...	...	350	
8	Instructors—1 Brigade Sergeant-Major, at 11s.	}		1,296	
	1 Quartermaster Sergeant, at 9s.				
	6 Sergeants, at 8s. 6d.				
9				1,646	
Total Artillery	890	Total salaries	...	...	£11,444

*Contingencies.*

Allowance for Maintenance of Uniform, Drill Rooms, Incidentals, &c., at £2 10s. for each efficient (881) so classed at the end of the financial year	...	2,203	
Command pay	...	20	
Horse Allowance for Mounting the Officer Commanding and 10 officers, 1 Sergeant-Major and 1 Trumpeter of the Field Artillery, at £25 each	...	325	
Hire of Horses for the Field Guns (36 Horses for 14 days)	...	504	
Compensation in lieu of Uniform for 8 Non-Commissioned Officer Instructors, at £5 each	...	40	
	Contingencies	...	3,092
890	Total Artillery	...	14,536

## ENGINEERS.

*(Volunteer Militia.)—One Company.*

1	Major Commanding	...	...	...	40
1	Captain	...	...	...	30
3	Lieutenants, at £20	...	...	...	60
1	Company Quartermaster Sergeant	...	...	...	15
4	Sergeants, at £14	...	...	...	56
5	Corporals, at £12	...	...	...	60
1	Bugler, at £10	...	...	...	10
94	Sappers, at £10	...	...	...	940

110

*Engineers (Permanent Staff).*

1	Instructor and Company Sergeant-Major, at 12s. per day	...	...	...	219
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111

Total salaries ... £1,430*Contingencies.*

Allowance for Maintenance of Uniform, Drill Room, Incidentals, &c., at £2 10s. for each efficient (110), so classed at the end of the financial year	...	£275
For Engineering Expenses	...	100
Horse Allowance for Officer Commanding	...	25
Command Pay	...	20
Compensation in lieu of Uniform for Instructor	...	5

Contingencies ... £425

111

Total Engineers ... 1,855

## INFANTRY VOLUNTEER MILITIA.

## ONE REGIMENT OF 2 BATTALIONS = 10 COMPANIES.

1	Lieut.-Colonel commanding the Regiment	...	...	70
5	Majors, at £40	...	...	200
10	Captains, at £30	...	...	300
30	Lieutenants, at £20	...	...	600
10	Color Sergeants, at £15	...	...	150
40	Sergeants, at £14	...	...	560
50	Corporals, at £12	...	...	600
10	Buglers, at £10	...	...	100
940	Privates, at £10	...	...	9,400

1,096

*Infantry Regimental Staff (Permanent).*

1	Adjutant, Pay and Quarter Master (including Horse Allowance), with fuel, light, and quarters	...	350
10	Instructors—1 Regimental Sergeant-Major, at 11s.	}	1,606
	1 Quartermaster Sergeant, at 9s.		
	8 Sergeants, at 8s. 6d.		

1,107

Total salaries ... £13,936*Contingencies.*

Allowance for Maintenance of Uniform, Drill Rooms, Incidentals, &c., at £2 10s. for each efficient (1,096), so classed at the end of the financial year	...	2,740
Horse Allowance for mounting 6 Field Officers, and 1 Acting Adjutant (when in the field), at £25 each	...	175
Command Pay	...	20
In aid of Regimental Band	...	100
Compensation in lieu of Uniform for Non-Commissioned Officer Instructors, at £5 each	...	50

1,107

Contingencies ... 3,085

2,108

Total Infantry ... £17,021

## MEDICAL DEPARTMENT.

2,108		Brought forward ...	£33,412
1	Principal Medical Officer per annum ...	£70	
1	Assistant to do. do. do. ...	40	
	Pay of other Medical Officers when detailed for duty :—		
	Surgeon-Majors—at 40s. for full day ...	}	240
	at 20s. for half day ...		
	Surgeons—at 30s. for full day ...		
	at 15s. for half day ...		
	Total Medical Department ...		350
2,110	Total Volunteer Militia ...		£33,762

*Recapitulation :—*

890	Artillery—Volunteer Militia ...	14,536
111	Engineers— „ „ ...	1,855
1,107	Infantry— „ „ ...	17,021
2	Medical Department ...	350
2,110	All ranks ...	£33,762

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

19/5/82.

## SUMMARY OF ESTIMATED ANNUAL MAXIMUM COST OF THE LAND FORCES.

No. of Men.						
8	Head Quarters Staff ...	£3,026				
125	Permanent Artillery ...	12,500				
87	Torpedo and Signal Corps ...	2,135				
2,110	Volunteer Militia ...	33,762				
680	Volunteers ...	2,750				
20	Ordnance Store Department, including Warlike and other Stores, Repairs, and Incidentals ...	5,084				
	General Contingencies, exclusive of Railway Transport and Grant to Victorian Rifle Association ...	2,500				
	For Camp of Instruction ...	2,500				
3,030	All ranks. Total ...	£64,257				

T. BRUCE HUTTON, Colonel,  
Acting Commandant.

19/5/82.