

DEPARTMENT OF SUPPLY

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Forwarded to : Col. A.P. Fleming, Department of Defence,
Melbourne, S.C.I.

Signature of Receiving Officer : *M. G. Weather*

Date : *8/10/54.*

Please sign and return to

Mr. H.J. Brown,
Department of Supply,
Research & Development Branch,
Box 2229U, G.P.O., MELBOURNE.

TD-3

4th October, 1954

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MEMORANDUM for:

Mr. A. P. Fleming,
Assistant Secretary,
Department of Defence,
MELBOURNE ... S.C.I.

Policy Questions Relating to the
Purchase of Colorob.

It is known that D.S.B. has in mind the purchase of a Colorob equipment from the United Kingdom and, as you know, this Department has sent two of its technical officers to work in G.C.H.Q. to assist in the design and development of this equipment. Mr. Oxford and I looked into the work being undertaken at G.C.H.Q. on this equipment during our recent visit to the United Kingdom and have considered the matter very seriously since our return in relation to its possible uses in Australia. The Chief Superintendent of C.P.R.L. sent a letter to the Director of D.S.B., reference 6208/005/2 of the 6th August, setting out certain opinions on the desirability of purchasing Colorob, as a result of Mr. Oxford's investigations. There is no reason as yet to believe that the opinions as expressed by the Chief Superintendent should be modified in any way.

2. It now appears that D.S.B. is of the opinion that, for political reasons, they intend purchasing a Colorob for use at D.S.B., irrespective of Supply officers' assessment of its desirability or otherwise.

3. It should be appreciated that Colorob is definitely not a computer as such, but an incomplete set of cryptanalyst's meccano. It is understood from Supply scientists at present attached to G.C.H.Q., that G.C.H.Q. is prepared to supply a limited number of components in this set, and that the user is required to assemble these to a pattern designed to perform any specific cryptanalytic process required.

4. From this it is clear that if the user is to avail himself of the degree of flexibility in the meccano, by constructing in sequence several different assemblages of components to serve his various purposes, he requires -

- (a) Considerable knowledge of the principles of the meccano set;
- (b) An ability to analyse his various cryptanalytic needs in terms of a set of processes which the meccano set, by virtue of its principles, is well able to perform;

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- (c) An ability to assemble component devices from the meccano set, in a fashion designed specifically to perform the chosen cryptanalytic processes.

It is clear, further, that if these technical abilities are not available, the user cannot avail himself of the flexibility in Colorob, for which he is paying so highly.

5. Requirements (a), (b) and (c) are each of a technical nature, involving fields of experience not likely to be available at D.S.B. Indeed by the Memorandum of Arrangements, Supply is already committed to provide the whole of this assistance should the present policy continue.

6. It follows, therefore, that by virtue of D.S.B.'s resolution to purchase Colorob, Supply becomes tacitly committed to a certain new level of continuous technical assistance of a type which would appear to involve -

- (a) Continuous maintenance of Supply staff at D.S.B. to perform functions 4 (b) above; and
- (b) Considerable backing at Salisbury to make available functions 4 (a) and 4 (c) above.

7. Should the level of effort available for this work within Supply fall short of that required, the expensive flexibility of Colorob as a cryptanalytic aid will not be available to D.S.B., and the wisdom of its purchase is thus open to question. There is little doubt in this case that what effort there is available within Supply would then be better employed in the development of specialised aids of a less ambitious type.

8. Summarising, should the future use of Colorob be a major factor in D.S.B. activities, considerable pressure will inevitably be brought to bear on us to engage in commensurate activities of the kind outlined above. We consider that a bare minimum staff for this work would perhaps number six, of whom three would have to be highly trained specialists, with extensive experience in computing techniques, together with considerable knowledge of cryptanalysis.

9. In view of the commitments which this Department would automatically be faced with if the purchase of Colorob is proceeded with, it is felt that the desirability of proceeding with the purchase of Colorob should be discussed fully at the J.I.C.S., with one or two appropriate officers from this Department putting forward their views on the effectiveness of the equipment in the Australian area. Such a meeting could be held to discuss the subject in the near future, but it is also pointed out that Mr. Strath, as leader of the "T" Section at Salisbury, is about to leave for the United Kingdom to spend about 6 - 8 weeks studying this subject in more detail amongst others, and it may be desirable to wait till his return about Christmas time.

I should welcome further discussions with you personally on this matter if you so desire.

AJB

Controller
Research and Development

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF SUPPLY

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The Laboratories include:

- Electronics Division (Formerly E.R.L.)
- Propulsion Division (Formerly P.R.L.)

CHEMICAL AND PHYSICAL RESEARCH LABORATORIES,
RESEARCH AND DEVELOPMENT BRANCH,
SALISBURY, SOUTH AUSTRALIA.

For further information refer to

Tel. ML7471, Ext.

Telegraphic Address:- Caplabs, Adelaide

In reply please quote.....

30th September, 1954.

The Controller,
Research and Development,
Department of Supply,
339 Swanston Street,
MELBOURNE. C.1. Vic.

Policy on Colorob.

It was considered a matter of some urgency, recently, to seek the technical opinion of those at Salisbury regarding the desirability of importing a Colorob to D.S.B. This opinion was clearly expressed in a joint memo submitted under cover of a letter from the Chief Superintendent, C.P.R.L., reference 6208/005/2 of 6th August. There is no reason as yet to believe that the opinions should be other than as expressed.

2. It now appears that D.S.B. are of the opinion that, for political reasons, they intend purchasing a Colorob for use at D.S.B irrespective of the Supply assessment of its desirability or otherwise.

3. It should be appreciated that Colorob is definitely not a computer as such, but an ever incomplete set of Cryptanalyst's Meccano. It is understood from Supply Scientists at present attached to G.C.H.Q., that G.C.H.Q., is prepared to supply a limited number of components in this set, and that the user is required to assemble these to a pattern designed to perform any specific cryptanalytic process required.

4. From this, it is clear that if the user is to avail himself of the degree of flexibility in the meccano, by constructing in sequence several different assemblages of components to serve his various purposes, he requires -

- (a) Considerable knowledge of the principles of the meccano set.
- (b) An ability to analyse his various cryptanalytic needs in terms of a set of processes which the meccano set by virtue of its principles, is well able to perform
- (c) An ability to assemble component devices from the meccano set, in a fashion, designed specifically to perform the chosen cryptanalytic processes.

It is clear further that if these technical abilities are not available, the user cannot avail himself of the flexibility in Colorob, for which he is paying so highly.

5. Requirements (a), (b) and (c) are **each** of a technical nature involving fields of experience not likely to be available at D.S.B. Indeed by the Memorandum of Arrangements,

Supply is already committed to provide the whole of this assistance, should the present policy continue.

6. It follows therefore that, by virtue of D.S.B.'s resolution to purchase Colorob, Supply becomes tacitly committed to a certain new level of continuous technical assistance of a type which would appear to involve

- (a) continuous maintenance of Supply staff at D.S.B. to perform 4(b) above
- (b) considerable backing at Salisbury to make available 4(a), (c).

7. Should the level of effort available for this work within Supply fall short of that required, the expensive flexibility of Colorob as a cryptanalytic aid will not be available to D.S.B., and the wisdom of its purchase is thus open to question. There is little doubt in this case that what effort there is available within Supply would then be better employed in the development of specialised aids of a less ambitious type.

8. Summarising, should the future use of Colorob be a major factor in D.S.B. activities, considerable pressure will inevitably be brought to bear on us to engage in commensurate activities of the kind outlined above. We consider that a bare minimum staff for this work would perhaps number six of whom three would have to be highly trained specialists with extensive experience in computing techniques together with considerable knowledge of crypt-analysis.

9. In view of the fact that no decision has yet been reached on the financing of the present T effort, and of the very limited funds available to C.P.R.L. as a whole, it would seem a matter of considerable urgency to examine critically the extent of effort to which Supply will shortly become committed in the matter, with a view to assessing the wisdom of the present policy.

Fox

(F.A. Fox)
Chief Superintendent,
C.P.R.L.