

to personnel difficulties than the present centralized organization. There would be the further serious drawback of having to adapt decentralized manual indexing to the Kard-veyer system now in use. The present indexing is of lamentably low standard but the level attainable at isolated sites would be lower still unless reinforced by major upgrading of personnel. Apart from the indexing aspects there would be some other difficulties. It would be necessary to have material travel back and forth through the conveyor system between the analyst and the Central Registry. Both material for 'Put Away' and the files themselves would be involved in this traffic. Furthermore, when the desk officer and analyst had identified which files they wished to retrieve, the request would be made to the Registry, yet another party, which would then retrieve the file and place it in the conveyor system. It is this procedure, together with other reservations about the quality and speed of work, which has caused the users largely to ignore the Registry and develop their own files. The dependence of the analyst upon the Registry and delivery systems, where responsibility for performance would be dispersed among a number of people making control difficult, would render him little better off than the desk officer is at present. For example, filing or retrieval errors could not be detected by the analyst until delivery of the file to the analyst in the Bureau. Massive paper movements through the system would result in 'put away' peaks and lags, with the latest material not being available upon the file being requested from the Randtriever. This would be likely to be a common occurrence since active files would always be travelling back and forth, with 'put away' papers rarely catching up. Moreover, placing analysts in Bureau centres with adequate clerical support to accomplish anything at all worthwhile would call for a substantial number of additional personnel because of necessary duplication of personnel in the Central Registry. Retaining a manual system with analysis and indexing in the Bureaux must therefore be rejected as unsatisfactory.

123. It follows that there would be merit in bringing back the files to the Bureau, that is, in re-establishing the Sub-Registries. This would be a major improvement, (although expensive in personnel) and the logic of it is indeed what has been adopted in the "Preferred System". However, all the difficulties inherent in the manual indexing and central Kard-veyer system would remain. The reconstitution of the Sub-Registries in traditional form must therefore be regarded as at best an inadequate half measure capable only of restoring service to approximately the standard existing before the move to the new building.

#### State of the Art

124. It has been shown that neither the existing system, nor any improved version of a manual system, is ever likely to give wholly adequate service to the Department in the face of present-day demands and conditions. In the search for the optimum solution to the problem a wide variety of modern techniques were examined. Some of the findings have been incorporated into Annexes IV, V, VI and VII on "Technical Aspects Related to Functions", "The Use of Optical Fibres in Computer Communication", "~~Microform~~" and "Optical Character Recognition".

125. There is no doubt that automation technology has achieved some striking successes in certain applications in both the private sector and in government. But there were also some early costly failures resulting from lack of proper determination of the needs of the organization in relation to the technology to be applied. Computers are now being widely used for information storage and retrieval systems but there are no standard proven total solutions relevant to the needs of this Department. The main reason is that complex substantive subject files with daily accretions do not fall into categories for which general solutions have been found, such as structured texts (e.g. scientific