

to the problem of design and evaluation of protective clothing which were employed during the war. To complete the volume, there are two chapters on the objectives and methods of air conditioning. These chapters are by no means exhaustive, but the particular aspects selected for discussion are well chosen to meet the purpose of the book. The final chapter discusses the influence of climate and season upon health. This controversial subject, of wide popular interest, is conservatively treated. The volume provides an excellent starting point for the beginner in the subject and will be of equal interest and value to those already familiar with the field.

-- Theodore F. Hatch

853. Industrial Uses of Radioactive Materials. A Selected Bibliography. -- Arthur D. Little, Inc., Cambridge 42, Mass. 13pp. (March, 1949).

Nearly 200 references on the use of radioactive materials in industry are given, first those of general interest and then the references dealing with specific fields, including petroleum, mining and metallurgy, textiles, instruments, radiography, analysis, pharmaceutical, glass, radioisotope preparation, and miscellaneous applications.

-- F.F. Rupert

854. The "Carbon-Oxygen Complex" as a Possible Initiator of Explosions and Formation of Carbon Monoxide in Compressed-Air Systems. H.W. Busch, L.B. Berger, and H.H. Schrenk. U.S. Bureau of Mines, Rept. Invest. No. 4465. 22pp. (June, 1949).

In the course of examinations by representatives of the Bureau of Mines of several compressed-air systems in which explosions had occurred, samples were obtained of the carbon deposits that are formed normally in various parts of the systems by decomposition of the compressor lubricating oil. Experimentation with these carbon deposits has demonstrated that they contain a "carbon-oxygen complex" similar to that formed on coal and on other carbonaceous materials and generally recognized as being the cause of spontaneous heating of coal. The exothermic properties exhibited by such a complex are considered significant in relation to the possible initiation of combustion reactions that may lead to explosions or formation of carbon monoxide in compressed-air systems. This report discusses the occurrence of explosions and formation of carbon monoxide in the use of compressed air and presents results of experimentation conducted with carbon deposits from air compressors. For the elimination and control of hazards in the use of compressed air, the selection or development of lubricants that would minimize or inhibit the action of the carbon-oxygen complex appear logical objectives. Control of the operating temperature of air compressors is of prime importance in reducing the possibility of activating carbon deposits to the point of exothermic reaction. The use of automatic, temperature actuated, shut-off mechanisms reflecting excessive temperatures in discharge lines of air compressors should prove effective in averting accidents that result primarily from operation at abnormally high temperatures.

-- Condensed from Authors' Introduction and Summary