

CHAPTER 9

Application to Type I Problems: Special Group Structure

9.1. Preliminaries. For convenience, but with abuse of notation, we shall in this and subsequent chapters not distinguish in notation between a random matrix and its possible values. Furthermore, the distribution of a random matrix, say X , will usually be written $P(dX)$ without any label on P , even though this P may represent a different distribution from one example to the next. The examples that will be exhibited below have been chosen because they deal with transformations that are basic and have important applications, and/or because they provide a good illustration of the method developed in Chapter 8. No attempt at exhaustiveness has been made. In particular, the treatment of GMANOVA has not been included. However, it can be found in Wijsman (1986), Section 6.5. There are several examples in this and the next chapter where the method could be applied from scratch, but where it is also possible to combine the results of two other, simpler, examples. In such cases we shall always follow the latter route. Concerning notation, from now on we shall not insist on restricting the use of symbols X and T to their meaning in Chapters 1 and 8, i.e., to the random variables with values in \mathcal{X} , \mathcal{T} , respectively. For instance, T will often be used to denote a triangular matrix. For future use we rewrite equation (8.20):

$$(9.1.1) \quad x = ghx_0.$$