Much recent and ongoing effort has focused on the elimination of chromate and hexavalent chromium compounds from metal finishing chemistries and processes. Significant focus has been given to chromate conversion coatings and chromated primers, but less attention paid to several related processes for metal finishing or to how well many of these alternatives function in combination with other non-chromated materials. This talk will provide an overview of the various metal finishing operations where chromate is currently or traditionally used, along with successes and lessons learned during development and transition of alternatives for DoD. Status of implementation will be discussed, as well as recommendations for testing and characterization of new technologies.