PROJECT AIR FORCE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND
- Purchase this document
- Browse Books & Publications
- Make a charitable contribution

For More Information
- Visit RAND at www.rand.org
- Explore RAND Project AIR FORCE
- View document details

Limited Electronic Distribution Rights
This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND PDFs to a non-RAND Web site is prohibited. RAND PDFs are protected under copyright law. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see RAND Permissions.
This product is part of the RAND Corporation technical report series. Reports may include research findings on a specific topic that is limited in scope; present discussions of the methodology employed in research; provide literature reviews, survey instruments, modeling exercises, guidelines for practitioners and research professionals, and supporting documentation; or deliver preliminary findings. All RAND reports undergo rigorous peer review to ensure that they meet high standards for research quality and objectivity.
Challenges and Issues with the Further Aging of U.S. Air Force Aircraft

Policy Options for Effective Life-Cycle Management of Resources

Jean R. Gebman

Prepared for the United States Air Force

Approved for public release; distribution unlimited
The research described in this report was sponsored by the United States Air Force under Contract FA7014-06-C-0001. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

Library of Congress Cataloging-in-Publication Data
Gebman, J. R.
Challenges and issues with the further aging of U.S. Air Force aircraft : policy options for effective life-cycle management of resources / Jean R. Gebman.
p. cm.
Includes bibliographical references.
UG1243.G429 2009
358.4'183—dc22
2009003493

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND’s publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2009 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND Web site is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (http://www.rand.org/publications/permissions.html).

Published 2009 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665
RAND URL: http://www.rand.org
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org
Over the next 20 years (2008–2028), further aging of already-old aircraft will introduce additional challenges and issues for aircraft operators, including the U.S. Air Force. This report identifies those challenges and issues (see pp. 23–40) and explores policy options (see pp. 41–43) for addressing them in ways that can contribute to effective life-cycle management of resources. The report draws on over a decade of Air Force–sponsored research at RAND, including RAND’s analysis of alternatives for KC-135 recapitalization. Although much of the report addresses the Air Force’s experiences with its aircraft, other operators of already-old aircraft face similar challenges and issues. This report aims to familiarize a broad range of managers and policymakers with the issues that must be addressed to best inform future resource-allocation decisions.

The technical challenges relate to structures, propulsion, and systems. The institutional challenges include limitations on independent verification of fleet status and future condition, limitations on information needed for engineering analyses including risk assessment, and an overall scarcity of resources. Example issues include (1) whether to develop sustainment master plans, (2) sufficiency of the level and composition of investments in remaining-life activities related to sustainment, and (3) the adequacy of methods used to establish service-life goals. The report uses a systems-engineering paradigm that breaks the set of challenges and issues down into their major elements and then analyzes how each element relates to values that are important to the customer. Such a value structure can help decisionmakers set resource-allocation policies and priorities.