

Unit 1 Vehicle Structure And Engines

Concerns over national security, environmental stresses, & high fuel prices have raised interest in reducing oil consumption. Through the Corporate Average Fuel Economy (CAFE) program, the Nat. Highway Safety Admin. (NHTSA) requires cars & light trucks to meet certain fuel economy standards. This report discusses: (1) how CAFE standards are designed to reduce fuel consumption; (2) strengths & weaknesses of the CAFE program & NHTSA's capabilities; & (3) market-based policies that could complement or replace CAFE. To do this work, the author reviewed recent studies & interviewed leading experts & agency officials. Includes recommendations. Charts & tables.

The motion of the train depends on the traction of linear motors in the vehicle. This book describes a number of essential technologies that can ensure the safe operation of Maglev trains, such as suspension and orientation technologies, network control and diagnosis technologies. This book is intended for researchers, scientists, engineers and graduate students involved in the rail transit industry, train control and diagnosis, and Maglev technology.

This standard is established based on the safety risk and certification risk of burglar alarm products. It stipulates the basic principles and requirements for the implementation of mandatory product certification for burglar alarm products.

After the 9/11 terrorist attacks, Congress & the Dept. of State initiated changes to the visa process to increase security, but these changes also increased the amount of time needed to adjudicate a visa. Although maintaining security is of paramount importance, State has acknowledged that long waits for visas may discourage legitimate travel to the U.S., potentially costing the country billions of dollars over time, & adversely influencing foreign citizens' opinions of our nation. A number of consular posts had long visa interview wait times. This report examines: (1) State's data on visa interview wait times; (2) actions State has taken to address wait times; & (3) State's strategy for dealing with projected growth in visa demand. Charts & tables.

The Advance Earned Income Tax Credit (AEITC) allows individuals to receive a portion of the Earned Income Tax Credit (EITC) in their paychecks, instead of receiving all of it when filing their year-end tax return. Limited research has been conducted on the AEITC since it was last examined in the early 1990s. This report determines: (1) how many individuals received the AEITC compared with the EITC in tax years 2002 through 2004, what actions, if any, have been taken to increase use, and the potential for increases in use in the future; (2) the extent of noncompliance, if any, associated with the AEITC; and (3) how well the IRS's procedures address the areas of noncompliance. Includes recommendations. Charts and tables.

This workshop furthers the dialogue among scientists, land managers, landowners, interested stakeholders & the public about how individuals are addressing climate change in natural resource management. Discussions illustrated the complexity of global climate change & the need for managers to consider how the impacts of climate change will unfold across regional & local landscapes. The workshop offered examples of how managers are already responding to those aspects of the global climate change that they can see or perceive. While no comprehensive solutions emerged, there was an appreciation that policy complexity may exceed the science complexity but that eventually

the accumulation of local actions will shape the future.

Analyzes a range of fuel treatments for representative dry forest stands in the Western U.S. dominated by ponderosa pine, Douglas-fir, & pinyon pine. Six silvicultural options (no thinning; thinning from below to 50 trees per acre [tpa], 100 tpa, 200 tpa, & 300 tpa; & prescribed fire) are considered in combination with the surface fuel treatments (no treatment, pile & burn, & prescribed fire), resulting in a range of alternative treatments for each representative stand. Fuel treatment scenarios presented here can be used by resource managers to examine alternatives for Nat. Environ. Policy Act documents & other applications that require scientifically based info. to quantify the effects of modifying forest structure & surface fuels. Illustrations.

In 2005, fed. spending on advertising exceeded \$1 billion. Five agencies -- DoD, Treasury, HHS, Interior, and NASA -- together made up 90% of this spending from 2001 to 2005. Federal agencies must take an aggressive role in ensuring substantial participation in fed. advertising contracts by bus. in the Small Bus. Admin.'s (SBA) 8(a) and small disadvantaged bus. (SDB) programs and minority-owned bus. This report describes: (1) strategies DoD, HHS, Treasury, Interior, and NASA used to address small bus. participation; and (2) the total obligations, number of contract actions, and percentage of total obligations represented by these actions that each agency awarded to 8(a), SDBs, and minority-owned bus. for advertising services. Illus.

Veterans returning from service in Iraq and Afghanistan could increase demand for affordable rental housing. Households with low incomes are eligible to receive rental assistance from HUD housing choice voucher, public housing, and project-based programs. However, because rental assistance is not an entitlement, not all who are eligible receive assistance. This report assesses: (1) the income status and demographic and housing characteristics of veteran renter households; (2) how HUD's rental assistance programs treat veteran status (whether a person is a veteran or not) and whether they use a veterans' preference; and (3) the extent to which HUD's rental assistance programs served veterans in FY 2005. Charts and tables.

The controversial nat. debate over strategic defense has been overshadowed by other nat. & global issues. Research programs for the Strategic Defense Initiative (SDI) continue, however, & the debate is likely to resume as visible results of that research begin to compete for a share of the nation's budget. This study considers strategic defense in the context of 4 competing strategic theories: deterrence through mutual assured destruction; deterrence through nuclear warfighting; deterrence relying on non-nuclear defense; & disarmament. Non-nuclear, space-based defense is not only feasible, but in some ways preferable to reliance on weapons of mass destruction. To support his case, he outlines a proposed actual system. Illus.

Five years after the terrorist attacks of Sept. 11, 2001, concerns continue to be raised about the nation's system for protecting commercial aviation. One layer of the aviation security system involves the ability of the fed. gov't. to respond to actual or potential security threats while a commercial aircraft is in flight. This report examines in-flight security threats & current fed. efforts to respond collaboratively to them. It is an unclassified version of a previously classified report, &

summarizes the overall findings & recommendations while omitting sensitive information about the in-flight security threat resolution process, including specific agency roles & responsibilities & coordination challenges that have occurred & steps agencies have taken to address them.

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