



## CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

March 1, 2004

### **H.R. 3752** **Commercial Space Launch Amendments Act of 2004**

*As ordered reported by the House Committee on Science on February 4, 2004*

#### **SUMMARY**

H.R. 3752 would expand and extend the Department of Transportation's (DOT's) licensing and indemnification authorities for commercial space transportation activities. Current law provides licensing criteria for commercial activities involving expendable and reusable launch vehicles (RLVs) and specifies the terms under which the government will indemnify licensees from damage claims by third parties. H.R. 3752 would amend current law to expressly authorize the licensing of manned RLVs, clarify how the indemnification authorities would apply to crew and passengers, and establish a new permitting system for experimental, manned suborbital space vehicles. The bill also would provide a three-year extension of DOT's indemnification authority, which expires on December 31, 2004. Finally, the bill would authorize the appropriation of amounts necessary for the activities of DOT's Office of the Associate Administrator for Commercial Space Transportation (AST) for fiscal years 2005 through 2007.

CBO estimates that implementing the bill would cost \$38 million over the 2005-2009 period, assuming appropriation of the necessary amounts. Expanding and extending DOT's indemnification authority could result in additional discretionary spending over the next five years, but CBO expects that any such costs would be negligible. CBO estimates that enacting H.R. 3752 would have no effect on direct spending or revenues.

H.R. 3752 contains no intergovernmental mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

H.R. 3752 would impose private-sector mandates as defined in UMRA on the commercial space flight industry by imposing additional requirements on licensees and participants (passengers) that engage in manned space flights. Based on information from government and industry sources, CBO estimates that the direct cost of those mandates would fall below the annual threshold established by UMRA for private-sector mandates (\$120 million in 2004, adjusted annually for inflation).

## ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of H.R. 3752 is shown in the following table. The costs of this legislation fall within budget function 400 (transportation).

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|  | By Fiscal Year, in Millions of Dollars |      |      |      |      |      |
|--|--|------|------|------|------|------|
|  | 2004                                   | 2005 | 2006 | 2007 | 2008 | 2009 |
| <b>SPENDING SUBJECT TO APPROPRIATION</b>   |  |      |      |      |      |      |
| AST Spending Under Current Law             |  |      |      |      |      |      |
| Budget Authority                           | 12                                     | 0    | 0    | 0    | 0    | 0    |
| Estimated Outlays                          | 12                                     | 1    | 0    | 0    | 0    | 0    |
| Proposed Changes                           |  |      |      |      |      |      |
| Estimated Authorization Level              | 0                                      | 12   | 13   | 13   | 0    | 0    |
| Estimated Outlays                          | 0                                      | 11   | 13   | 13   | 1    | 0    |
| AST Spending Under H.R. 3752               |  |      |      |      |      |      |
| Estimated Authorization Level <sup>a</sup> | 12                                     | 12   | 13   | 13   | 0    | 0    |
| Estimated Outlays                          | 12                                     | 12   | 13   | 13   | 1    | 0    |

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a. The 2004 level is the amount appropriated for that year.

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## BASIS OF ESTIMATE

For this estimate, CBO assumes that the necessary amounts will be appropriated for each fiscal year and that outlays will follow the historical patterns for AST programs. CBO's estimate of AST's expenses over the 2005-2007 period is based on the \$12 million appropriated for the agency for fiscal year 2004, including adjustments for anticipated inflation. CBO estimates that extending and expanding DOT's indemnification authority through 2007 would have no significant budgetary impact over the next five years largely because operators of commercial space vehicles must have significant private insurance coverage in order to be licensed. Finally, CBO estimates that authorizing DOT to issue experimental permits would have no significant budgetary impact because the activities covered by such permits would not be eligible for indemnification.

## **Extension of Indemnification Authority**

DOT's existing indemnification authority is subject to certain limitations. DOT may indemnify licensees against third-party claims only if the licensee has entered into cross-waivers of liability with its contractors, subcontractors, customers, and the federal government, and if the licensee has obtained private insurance to cover the first tier of risk. The amount of private insurance for each launch is supposed to cover the maximum probable loss, but not more than \$500 million or the maximum amount available on the world market, whichever is lower. DOT's indemnification authority covers the second-tier of risk up to a ceiling of \$1.5 billion (in 1989 dollars), but such payments can only be made if funds are appropriated in advance or made available through subsequent legislation.

DOT's guidelines suggest that the government would not license a launch system if the estimated maximum probable loss is greater than the maximum amount of insurance because that would suggest the launch carries excessive risk. If damage claims resulting from a commercial launch exceeded the amount of private insurance, however, DOT would need to seek a Congressional appropriation to cover that cost.

So far, this system of insurance coverage has worked for licensees using expendable launch vehicles. According to DOT, the cost of damages associated with incidents involving expendable launch services have been small and the cost of damages have been covered by private insurance. Hence, CBO estimates that the cost of extending the indemnification coverage for expendable launch vehicles would not be significant.

Unmanned RLVs have been eligible for similar insurance coverage and indemnification since 1999, but this industry has not developed and no launches have yet occurred. (The only RLV that has ever flown is the X-15, which was developed by the federal government and flew from 1959-1968). As a result, there are no data on the risks and costs of indemnifying commercial unmanned RLV systems. Nonetheless, CBO expects that DOT would only issue licenses for unmanned RLVs if the agency estimates that such systems would not pose excessive risks.

## **Expansion of Indemnification Provisions**

Expressly allowing DOT to license manned RLVs would make those services eligible for indemnification, subject to certain conditions. The bill excludes crew and "space flight participants" from the definition of third parties, making claims filed by them (or on their behalf) ineligible for indemnification. It also would require crew and passengers to agree not to sue and to be responsible for any losses the party sustains. In addition, the bill would

not indemnify third-party claims brought against passengers. Any claims filed by families of any affected crew or passengers would be indemnified. Because most flights are unlikely to carry more than two people (at least in the near term), this provision would not significantly expand the pool of potential third-party claimants.

For this estimate, CBO assumes that DOT would only issue licenses for manned RLVs if the agency estimates that the services or systems would not pose excessive risk. We assume that DOT would incorporate the potential for claims from families of crew or space flight participants when calculating the risk and insurance requirements for manned flights.

We also expect that the number of manned flights—and hence the potential frequency of federal spending for claims—is likely to be very small over the next few years. Interest in commercial manned flight has been spurred by the January 1, 2005, deadline for the privately sponsored “X-prize,” which will award \$10 million to the first contestant that successfully conducts two piloted flights to an altitude of at least 100 kilometers (60 miles) within a two-week period. DOT currently is reviewing applications for manned flights, some of which are expected to compete for the prize. Nonetheless, manned RLVs remain an embryonic technology, which is likely to limit the number of licensed flights for the foreseeable future.

## **ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS**

H.R. 3752 contains no intergovernmental mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

## **ESTIMATED IMPACT ON THE PRIVATE SECTOR**

H.R. 3752 would impose private-sector mandates as defined in UMRA on the commercial space flight industry by imposing additional requirements on licensees and participants that engage in manned space flights. Based on information from government and industry sources, CBO estimates that the direct cost of those mandates would fall below the annual threshold established by UMRA for private-sector mandates (\$120 million in 2004, adjusted annually for inflation).

Under current law, persons must obtain licenses from the federal government to engage in commercial space flights. The bill would require the Secretary of Transportation to establish training requirements and medical standards for the crew of manned space flight vehicles. Currently, license holders for commercial space transportation without passengers must

comply with such requirements as they are outlined by the DOT's Office of the Associate Administrator for Commercial Space Transportation. This bill would extend current regulations for commercial space vehicles to manned space vehicles.

The Secretary also would establish regulations requiring license holders to provide their passengers with a disclosure about the risks of launch and reentry including a discussion of the safety record of the particular vehicle. In addition, passengers would have to provide written consent certifying that they have been notified of the risks of flight. Currently, licensees are required to provide similar information about flight risks for insurance purposes in the form of a reciprocal waiver of claims between the company and its employees and crew. The bill's required disclosure of risks of commercial space transportation, therefore, would not result in new costs for license holders. According to industry experts, this requirement may lower costs to the industry by providing one uniform standard for disclosure of risks.

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