While the search for legislative responses to terrorism continues in the 2002 congressional session, a new set of issues unrelated to the September 11 attacks will come to the fore. One which affects high-technology industries, including optics, is reform of the U.S. export control system.

In September 2001, the Senate passed a revision (S.149) of the Export Administration Act (EAA), which had expired in August 2001. During the debate on the Senate floor, Sen. Fred Thompson (R-Tennessee) apparently had just one topic on his mind: “rogue” fiber-optic exports. Thompson related how in the 1990s, illegal exports to China by an unnamed U.S. company ended up in Iraqi anti-aircraft weapons used to shoot at U.S. planes in the no-fly zone. “There have been over 300 incidents where Saddam's troops have shot at our aircraft over that no-fly zone,” Thompson said. “I hope and pray they never hit one. I hope and pray that if they do, we don’t discover that the technology used to shoot that airplane down originally emanated from the United States of America.”

Thompson was using the example of fiber-optic components to persuade his colleagues not to approve the EAA reauthorization bill, then under debate. The bill would make it easier for high-technology companies to ship “dual-use” technology, the term used to describe commercial components and equipment which can be converted to military use. Lasers, optics, and the equipment they are used in are all listed in the Commodity Control List (CCL) of 2,400 categories of products for which an export license is a necessary requirement for shipment overseas. The reforms in the Senate bill are chiefly aimed at speeding up Commerce Department approval of export license applications and allowing more liberal dual-use exports to China, an immense emerging market for technology.

The bill would be a boon to manufacturers of Nd:YAG laser-cutting machines, which are typically used to cut steel. Because these lasers contain pump diodes measuring longer than 0.8 µm, they are listed on the CCL. Getting approval for an export license can take a year, says Jeff Bullington, president of Infinite Photonics (Warwick, Rhode Island), which manufactures diodes for the U.S. market. “These laser machines are a niche, emerging market,” explains Bullington. “But it is difficult to exploit with the current export control regime.” Competing foreign manufacturers don’t have to worry about getting licenses.

The Senate passed S.149—which makes a number of industry-friendly changes to the EAA—by a vote of 85-14. That was on September 6, about a month after the House International Relations Committee passed a much more “hawkish” bill strongly opposed by high-tech industry groups. Because of the scheduling slowdown in the aftermath of September 11 and the anthrax scare, House leaders found it difficult to make time for the House bill (H.R. 2581), which contained 33 business-opposed amendments sponsored by Rep. Henry Hyde (R-Illinois). With the congressional session slated to end in late December, the Bush Administration was pressing for a compromise in which a few of Hyde’s provisions would be added to the more moderate S. 149 and quickly passed by both houses with minimal debate, according to a Senate staffer involved in the discussions.

If that effort proves unsuccessful, the White House will turn up the pressure a few notches in early 2002—and not only because of the legislation’s perceived usefulness as a political statement in the war against terrorism. There is a practical imperative here, too. Since the EAA lapsed on August 20, export controls have been governed by the substantially weaker International Emergency Economic Powers Act (IEEPA). Under this law, penalties for violations of export controls are substantially weaker than they would be under the EAA.
The Senate bill has a number of complex components. Its key provision, which deals with “foreign availability,” would allow optics manufacturers (and other U.S. exporters) to sell equipment to China as long as the product in question was sold to China by one other foreign company in sufficient quantity and at a reasonable price. Currently, a U.S. company can export certain cutting-edge products to China only if companies from countries outside what is called the Wassenaar Arrangement—Taiwan—for example, are already making such sales. Wassenaar countries include Japan, Canada and those in Europe. So if, for example, a French company were selling optical modulators to a Chinese company, a U.S. firm would have a strong argument in its bid to do the same. But the U.S. company would still have to pound the halls of the Commerce Department for months convincing officials to approve its export petition.

Not only would the Senate bill loosen the foreign availability provision, it would also force the Commerce Department to move more quickly on export applications. Even when the U.S. government approves licenses—and 96% are approved within 90 days—foreign end-users sometimes get tired of waiting and buy from another Wassenaar country company which doesn’t need to comply with the EAA. Hence the lure of trying to beat the system by not obtaining an export license. By its own admission, for example, Opto Power Corp. (Tucson, Arizona) illegally exported diode lasers to Israel for over two years. The fact that the company voluntarily disclosed this information to the Commerce Department led to the government’s decision to waive $40,000 of the $80,000 penalty Opto agreed to pay last May, on the condition the company commits no future violations.

But the Senate bill is no giveaway to U.S. business. Even if a technology were deemed “available” under the foreign availability provision, the President could delay exports for three consecutive six-month periods during which he may try to persuade the foreign companies to stop exporting the equipment at issue. At the end of those 18 months, if the President objected to the U.S. exports, he could still prevent shipment under the “enhanced” control authority given him under the terms of the Senate bill.

Being able to export optics technology to China will become increasingly important to U.S. companies. A report from ElectroniCast Corp. (San Mateo, California) predicts that while the U.S. accounts for 37.1% of the market for optical modulators, a market which will grow by 40% a year for the next five years, eventually Asia will claim America’s number one position. “The majority of ‘new build’ long-haul high-data-rate Asia links will be attributed to China,” says ElectroniCast President Stephen Montgomery.

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