

Chapter 1 : How to Insulate the Crawl Space Under Your Home | Today's Homeowner

This chapter presents an overview of central issues that must be confronted in developing a decent account of meaning, with various positions that might be taken with respect to them, and with some of the arguments that can be given for and against these positions.

If your PC has two or more drives, storing personal files on the main drive can cause the PC to run slower. To improve performance, move personal files to a secondary hard drive. Search for and open Storage or Storage settings. Select a drive under Local Storage to check the remaining storage space. Check the different types of files and the space they use. This information can help you decide which content to save on another drive. Go to the Storage window previously opened. Under More storage settings, click Change where new content is saved. In the list, click the drop-down menu under the type of content you want save to a different hard drive. Then select the drive where you want new content to be saved. Do not save content to the Recovery drive. Storing content on this drive can make the operating system unrecoverable in the event of a problem. After changing the drive designation, click Apply to save the changes. Configure Storage sense to free up space automatically Windows 10 Using Storage sense frees up space on your computer. When configured properly, Storage sense can automatically delete unwanted files, such as temporary files, old items in the recycle bin, and files in the Downloads folder that have not been recently accessed or used. Storage sense does not remove all the unneeded files. In addition to the files that are automatically deleted, you might need to delete other files, such as update logs. Search for and open Windows Settings, click System, and then click Storage. Turn the Storage sense toggle switch to On, and then click Change how we free up space automatically. The Change how we free up space automatically window displays. On the Change how we free up space automatically window, choose when you want Windows to run Storage sense and clean up content on your computer. Depending on your version of Windows, the options in the Change how we free up space automatically window might vary slightly. Use the drop-down menu to select when you want to run Storage sense. Then use the drop-down menus to decide when to delete files from the Recycle bin and Downloads folder. Free up space now: You can select the check box to delete previous versions of Windows if you have installed a newer version of Windows. Save files to a new location on a secondary drive To save files to a new location on a secondary or external hard drive, change the location of the folders to the new destination to avoid confusion when saving files. If you are using a removable storage device, such as a thumb drive, make sure to insert the device into the computer each time you save to it. Open the Location tab, and then click Find Target. Browse to the location of the new document folder, click the address bar, and then copy the new address. Clear the field on the Document Properties window, paste the new address in the field, and then click Apply. In the Move Folder box, click Yes to move your files and content from the old location to the new location. You can repeat this procedure to change the location folders to avoid confusion when saving files. Move files to an external drive If you have data or files you want to save, but you do not need them very often, you can save them on a removable drive. Then, you can connect the drive when you need the files, but they do not take up space on the main hard drive. Make sure the external storage device has sufficient unused space to accommodate the files you are moving to it. Connect the external drive, open the storage location on your computer, and then create a new folder on the drive. On the computer hard drive, open C: Right-click My Documents or Documents folder, and then select Properties. Click the Location tab. In the dialog box, navigate to the new folder you created on the external hard drive, and then create a new folder inside it called Documents. Select that new folder. Click Select Folder, and then click OK to move the files. Click Yes to confirm. Wait while the files are moved.

Space is, of course, infinitely more hostile to human life than the surface of the sea; escaping Earth's gravity entails a good deal more work and expense than shoving off from the shore.

Smith, partner, Bradley Arant Boult Cummings LLP Summer Building owners who lease space that is not located on a hospital campus “ like this office building in Franklin, Tennessee ” to medical tenants need to be aware of some unique issues. Building owners who lease space to health care tenants must be aware of some unique issues. As hospitals, health care systems, medical providers and physicians increasingly seek to expand their brand and image as well as their ability to serve patients in convenient locations, health care leasing options have also greatly expanded, from traditional hospital campus medical office buildings to a wide range of settings. Whether a medical tenant is considering a site in a repurposed grocery store, shopping mall, freestanding office building or even an industrial site, these nontraditional, off-campus spaces create new issues for health care leasing. Here are six health care lease issues that building owners need to consider when leasing space to health care tenants. These laws place specific limitations on the manner in which certain landlords may lease space to physician tenants. The Anti-kickback Statute makes it a crime to knowingly offer or receive payment in exchange for referrals for services or goods that are reimbursable under Medicare or Medicaid; for example, by setting rent payments that vary with the number of patients or referrals. The Stark Law prohibits physicians from making referrals for certain designated health services, which include both inpatient and outpatient services, to entities with which the physician has a financial relationship. The Stark Law is meant to regulate referral payments; significant civil penalties are possible if the law is violated. The Anti-kickback Statute is meant to force providers of health services reimbursable by governmental programs to consider seriously the means and manner of payment; criminal penalties may be imposed if it is violated. These laws significantly up the ante for real estate practitioners, because the ramifications of lease-related mistakes in the health care field are far more extensive than in a typical leasing transaction. Many typical leases provide maintenance and janitorial personnel relatively free access to leased office space after hours. The landlord often has access to the space as well, under certain circumstances. Health care leases present a challenge when it comes to this type of access. Reasonable safeguards, such as ensuring that file cabinets are locked or that access is supervised, may have to be put in place to protect confidential information. A medical tenant may also need to educate the landlord and building staff regarding privacy issues. Because of the ACA, many hospitals and health care systems have been forced to seek to achieve greater efficiencies by streamlining services and, in some instances, relocating physician tenants to nontraditional locations. This creates obvious challenges for health care real estate practitioners, who have two meaningful ways to meet these new demands. For example, abandoned grocery stores, movie theaters, stand-alone fast food sites and even older or underperforming shopping malls have proven excellent opportunities into which health care providers can expand their services and their brand. Zoning is rarely, if ever, an issue on hospital campuses, but it can be an obstacle in general retail settings. Both landlords and medical tenants should be careful to address utility costs as well as availability early on. Furthermore, improvements installed into the leased premises may be valuable to the medical tenant after the lease agreement expires or is terminated. Ownership of these leasehold improvements must be adequately addressed upfront, during lease negotiations.

Issues and Options A key issue is whether the nonproliferation benefits gained by linking the ISS to Russian proliferation behavior are worth the costs to the U.S. space program at this point in time.

Right-click one of the files that is contained in the folder, and then click Rename. After the file name, type. If you can no longer reproduce the problem, you have found the specific add-in that causes the problem. If you must have the features that the add-in provides, contact the vendor of the add-in for an update. If the problem is not resolved, rename the add-in by using its original name, and then repeat steps 3 through 6 for each file in the Startup folder. If you can still reproduce the problem, type the following path in the address bar of Windows Explorer, and then click OK. For Windows 10, Windows 8. If the problem is not resolved after you disable the Startup folder add-ins, go to the next method. Programs that interact with Word install COM add-ins. To delete the COM add-ins registry keys, follow these steps: Exit all Office programs. Type regedit in the Search box in Windows 10, Windows 8. Locate the following registry subkey: On the Edit menu, click Delete, and then click Yes. If the problem is resolved, you have determined that a COM add-in program is causing the problem. Next, you must determine which COM add-in program is causing the problem. Determine which COM add-in program is causing the problem To determine which COM add-in program is causing the problem, follow these steps: Click Yes, and then click OK. Use one of the following procedures, as appropriate for the version of Word that you are running: If more than one add-in is listed, clear only one add-in check box at a time. This procedure helps determine which add-in is causing the problem. On the File menu, click Exit. If more than one add-in is listed, click to clear only one add-in check box at a time. If the problem is resolved when you start Word, you have determined which COM add-in is causing the problem. If you must have the features that the add-in provides, you must determine which add-in includes those features so that you can contact the vendor for an update. Change the default printer To change the default printer, follow these steps: If the problem is resolved after you start Word, you have determined that the printer is causing the problem. You can also customize the site to control your search. To start your search, go to the Microsoft Support website. Additional resources If you experience specific issues when you use Word, go to the following websites to search for specific information about your program version:

Chapter 4 : Space of Issues and Options - Oxford Scholarship

Rural Development Strategy -Open Space and Recreation: Issues and Options 10/ February 4 1 Introduction For the purposes of this Paper, the term 'open space' relates to an area of land or a water body to which the.

Other experiments would study how things can be manufactured in space. The shuttle would also enable astronauts to launch satellites from the shuttle and even repair satellites already out in space. Development costs were expected to be recouped through frequent access to space. These claims were made in an effort to obtain budgetary funding from the United States Congress. This hiatus became lengthy and ultimately lasted almost three years as arguments over funding and the safety of the program continued. Eventually the military resumed the use of expendable launch vehicles instead. Overall, missions were launched during the 30 years after the first orbital flight of Columbia, averaging approximately one every 3 months. Costs[edit] Some reasons for the higher-than-expected operational costs were: Before the "Block II" engines, the turbopumps a primary engine component had to be removed, disassembled, and totally overhauled after each flight. This increased turn-around time. While not reducing absolute operating costs, more launches per year gives a lower cost per launch. Some early hypothetical studies examined 55 launches per year see above , but the maximum possible launch rate was limited to 24 per year based on manufacturing capacity of the Michoud facility that constructs the external tank. Early in shuttle development, the expected launch rate was about 12 per year. When the decision was made on the main shuttle contractors in , work was spread among companies to make the program more attractive to Congress, such as the contract for the Solid Rocket Boosters to Morton Thiokol in Utah. Over the course of the program, this raised operational costs,[citation needed] though the consolidation of the US aerospace industry in the s meant the majority of the Shuttle was now with one company: Cultural issues and problems[edit] For a successful technology, reality must take precedence over public relations, for nature cannot be fooled. Some researchers have criticized a pervasive shift in NASA culture away from safety in order to ensure that launches took place in a timely fashion, sometimes called " go fever ". Allegedly, NASA upper-level management embraced this decreased safety focus in the s while some engineers remained wary. One reason for this may be an attempt to assure the government of NASA perfection and success in order to ensure the supply of funds. The other may be that they sincerely believed it to be true, demonstrating an almost incredible lack of communication between themselves and their working engineers. For example, NASA discounted the risk from small foam chunk breakage at launch and assumed that the lack of damage from prior foam collisions suggested the future risk was low. After landing, the orbiter would be checked out and start "mating" to the rest of the system the ET and SRBs , and be ready for launch in as little as two weeks. Instead, this turnaround process usually took months; Atlantis set the pre-Challenger record by launching twice within 54 days, while Columbia set the post-Challenger record of 88 days. Furthermore, because in many cases there are no survivable abort modes , many pieces of hardware simply must function perfectly and so must be carefully inspected before each flight. As the Russians demonstrated, capsules and unmanned supply rockets are sufficient to supply a space station. Expendable launch vehicles ELVs proved much cheaper and more flexible. Following the Challenger disaster, use of the Shuttle to carry the powerful liquid fueled Centaur upper stages planned for interplanetary probes was ruled out for Shuttle safety reasons. Advances in technology have made probes smaller and lighter. Accidents[edit] SRB O-ring "blow by" is what caused the Challenger accident While the technical details of the Challenger and Columbia accidents are different, the organizational problems show similarities. The vehicle gave ample warning beforehand of abnormal problems. A heavily layered, procedure-oriented bureaucratic structure inhibited necessary communication and action. With Challenger, an O-ring that should not have eroded at all did erode on earlier shuttle launches. Morton-Thiokol designed and manufactured the SRBs, and during a pre-launch conference call with NASA, Roger Boisjoly , the Thiokol engineer most experienced with the O-rings, pleaded with management repeatedly to cancel or reschedule the launch. He raised concerns that the unusually low temperatures would stiffen the O-rings, preventing a complete seal during flexing of the rocket motor segments, which was exactly what happened on the fatal flight. Columbia was destroyed because of damaged

thermal protection from foam debris that broke off from the external tank during ascent. The foam had not been designed or expected to break off, but had been observed in the past to do so without incident. The original shuttle operational specification said the orbiter thermal protection tiles were not designed to withstand any debris hits at all. Over time NASA managers gradually accepted more tile damage, similar to how O-ring damage was accepted. The Columbia Accident Investigation Board called this tendency the "normalization of deviance" — a gradual acceptance of events outside the design tolerances of the craft simply because they had not been catastrophic to date. In fact, Shuttles had previously come back missing as many as 20 tiles without any problem. STS-1 and STS had all flown with missing thermal tiles from the orbital maneuvering system pods visible to the crew. The problem on Columbia was that the damage was sustained from a foam strike to the reinforced carbon-carbon leading edge panel of the wing, not the heat tiles. The first Shuttle mission, STS-1, had a protruding gap filler that diverted hot gas into the right wheel well on re-entry, resulting in a buckling of the right main landing gear door. Nixon in , the operational costs, flight rate, payload capacity, and reliability by the time of the February Columbia accident proved to be much worse than originally anticipated. To justify its very large fixed operational program cost, NASA initially forced all domestic, internal, and Department of Defense payloads to the shuttle. Griffin argued in a paper that the Saturn program, if continued, could have provided six manned launches per year — two of them to the moon — at the same cost as the Shuttle program, with an additional ability to loft infrastructure for further missions: Reusable main engines were made a priority. This necessitated that they not burn up upon atmospheric reentry, which in turn made mounting them on the orbiter itself the one part of the Shuttle system where reuse was paramount a seemingly logical decision. However, this had the following consequences: A concern expressed by the Augustine Commission was that "the civil space program is overly dependent upon the Space Shuttle for access to space.

Chapter 5 : How to Protect Astronauts from Space Radiation on Mars | NASA

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Description of the "White space between pages" option in Word Content provided by Microsoft Summary In Microsoft Word, you can hide the white space at the top and bottom of each page and reduce the amount of gray space that appears between pages in print layout view. Gray space to the left and right of the page is not affected. This behavior is controlled by the White space between pages option. When you select the White space between pages option, Word controls the white space of any newly created documents as well as the current document according to the following rules and special cases: Behavior Explanation Per Window When the option is set and multiple documents are open at the same time, the document with focus is affected; other open documents are not affected. Per Document When you save and close a document, the setting is retained in the document. If the document is open when you create a new document, the new document acquires the setting. For example, if white space is hidden in the document you open, white space will be hidden in new documents you create. Per user option Set on a per user basis. Backwards compatibility If you open the document in Word or Word 97, the setting is ignored. However, because the setting is stored in the document, you can edit the document in Word 97 or Word , save the file, and this setting will not be lost when you reopen the document in Word or in a later version. Special zoom behavior When you zoom to show more than one page in print layout view, the white space in the document will be displayed regardless of the state of the option. The "White space between pages" option is unavailable dimmed. Adjusting the Zoom percentage to show one page returns the view to the previous state. Special page element behavior Adding a page border, page numbers, header, or footer resets the "White space between pages" option. To hide the white space, click to clear the "White space between pages" check box. Special process behavior When finding or replacing text or when proofing the document in the foreground, if Word finds an item in the header or footer area, Word switches to Normal view and displays the item in a pane below the document. The state of "White space between pages" option does not change. More Information In Microsoft Word and in Microsoft Office Word , you can use either of the following methods to show or to hide white space: On the Tools menu, click Options. Click the View tab and then click to select or clear the White space between pages check box. Rest the mouse pointer over the gray area above or below a page and then click when you see the Hide White Space or Show White Space pointer. In Microsoft Office Word , use either of the following methods to show or to hide white space: In the left pane, click Customize. In the Choose commands from list, click All Commands. Rest the mouse pointer over the gray area above or below a page and then click when you see the Double-click to hide white space or Double-click to show white space If you are hiding the white space, page breaks are still visible and noticeable in the document.

Chapter 6 : Crawl Space Encapsulation System for Crawl Space Water & Moisture Problems

There are many terrific articles, including yours, on encapsulating the crawl.. However there is an alternative, that is moving the pressure and thermal boundaries to the bottom of the floor joist, air sealing and leaving the venting (or increasing it).

Sign up or login to join the discussions! Feb 1, 3: Could NASA have done something to save the crew? If we die, we want people to accept it. We are in a risky business, and we hope that if anything happens to us, it will not delay the program. The conquest of space is worth the risk of life. The foam strike was not observed live. Foam strikes during launch were not uncommon events, and shuttle program managers elected not to take on-orbit images of Columbia to visually assess any potential damage. In reality, the impact shattered at least one of the crucial reinforced carbon-carbon heat shield panels that lined the edge of the wing, leaving a large hole in the brittle ceramic material. Controllers continued to hope that they were merely looking at instrumentation failures, even as evidence mounted that a catastrophic event had taken place. Columbia was gone, and all seven of its crew had been killed. There are no survivors. Bush in a national address, My own memories of the time immediately following the accident are dominated by images of somber meetings and frantic work. I was a junior system administrator at Boeing in Houston, and because we supported the shuttle program, we had to locate and send cases and cases of backup tapesâ€”containing everything that happened on every server in our data center during the missionâ€”over to NASA for analysis. That focus on narrow, group-specific work and reporting, without a complementary focus on cross-department integration and communication, contributed at least as much to the loss of the shuttle as did the foam impact. A number of prominent shuttle program managers were reassigned. But imagine an alternate timeline for the Columbia mission in which NASA quickly realized just how devastating the foam strike had been. Could the Columbia astronauts have been safely retrieved from orbit? During the writing of its report, the CAIB had the same question, so it asked NASA to develop a theoretical repair and rescue plan for Columbia "based on the premise that the wing damage events during launch were recognized early during the mission. They carry the low-key title " STS In-Flight Options Assessment ," but the scenario they outline would have pushed NASA to its absolute limits as it mounted the most dramatic space mission of all time. NASA planners did have one fortuitous ace in the hole that made the plan possible: Two more weeks of refurbishment and prep work remained before it would be wheeled across the space center to the enormous Vehicle Assembly Building and hoisted up for attachment to an external tank and a pair of solid rocket boosters. Atlantis was in a similar state while Columbia was flying its final mission. NASA So an in-orbit rescue was at least feasibleâ€”but making a shuttle ready to fly is an incredibly complicated procedure involving millions of discrete steps. The desperate race The scenarios were to assume that a decision to repair or rescue the Columbia crew would be made quickly, with no regard to risk. Weight is a precious commodity for spacecraft. Every gram of mass that must be boosted up into orbit must be paid for with fuel, and adding fuel adds weight that must also be paid for in more fuel this spiral of mass-begets-fuel-begets-mass is often referred to as the tyranny of the rocket equation. Rather than carrying up spare "air," spacecraft launch with a mostly fixed volume of internal air, which they recycle by adding back component gasses. The crew exhales carbon dioxide, though, and that carbon dioxide must be removed from the air. These canisters are limited-use items, each containing a certain quantity of lithium hydroxide; Columbia was equipped with 69 of them. However, doing so would require the crew to spend 12 hours of each day doing as little as possibleâ€”sleeping, resting, and doing everything they could to keep their metabolic rates low. The remaining three consumable categories consisted of food, water, and propellant. Assuming that the crew would be moving minimally, food and water could stretch well beyond the day limit imposed by the LiOH canisters. To preserve propellant, the orbiter would be placed into an attitude needing minimal fuel to maintain. Exactly when the crew of Columbia would enact these power- and oxygen-saving measures depended on a short decision tree.

Chapter 7 : The Iran Nonproliferation Act and the International Space Station: Issues and Options

The City has addressed parking problems associated review of parking management programs including options for reflect demand and available curb space, or.

Take the test and earn 0. SHARE Click here to read more articles about Moisture Problems Depending on where you live, critters from snakes and rodents to spiders, bugs, and armadillos may have taken up residence in your crawl space. Add a little waterâ€™or even a lot when flooding occursâ€™and mold and rot create indoor air quality IAQ problems and structural deterioration. Oh, and did I mention that soil gases like radon or methane can find their way into your house through the crawl space? A well-sealed and insulated conditioned crawl space in a new home. New Tradition Homes We build crawl spaces because they are cheaper to build than basements, or because ground conditions make building a basement impractical. A crawl space can also provide service access for plumbing, electrical, and heating-and-cooling systems. Which Crawl Spaces Work Where? In recent years, Building America and others have done a lot of research around the country on crawl spaces. By looking at this research, we can learn a lot about which crawl space configuration works where. In climates with extended periods of hot-humid weatherâ€™this includes the Southeast and most of the Northeast and Midwestâ€™closed crawl spaces are the best option. Under hot-humid conditions, warm, moist air enters the vented crawl space from outside and can condense on the cooler surfaces. These cooler surfaces are created within the crawl space by the shade provided by the building and the moderating effect of the contact between the crawl space and the ground. In closed conditioned crawl spaces, insulation is normally placed around the perimeter and not in the floor. When closed conditioned crawls are used in heating-dominated climates, this same ground coupling can actually increase the heating load of a house, but that may cost very little compared to the cost of damage done by moisture brought in by venting. Definitions Crawl spaces can be vented or closed. Crawl spaces without venting are usually referred to as unvented, closed, or sealed. Vented crawl spaces have the air and vapor barriers and the thermal boundary of the house in the floor assembly above the crawl space and provide passive venting from the crawl to the exterior. Most codes require a minimum of 1 square foot of net free vent area for each square feet of crawl space; they also require that vents be placed to provide cross-ventilation. Closed unvented crawl spaces come in a variety of configurations. Insulation is normally at the perimeter of the crawl with a continuous air and vapor barrier on the ground and running up the perimeter wall to the sill plate or to a termite inspection strip, where required. Closed power-vented crawl spaces generally look like closed unconditioned crawl spaces but include an exhaust fan to draw air from the crawl space to the exterior. The primary advantage of this system is its ability to reverse the stack effect and decouple the air in the house from the crawlâ€™especially during the heating season. Codes generally require 1 CFM of power venting for every 50 square feet of crawl space area. In the drier regions of the West, and evenâ€™surprisinglyâ€™in the marine climates of the Northwest, vented crawl spaces work acceptably most of the time. The hot-dry conditions in summer and the cold-moist conditions in winter do not cause the same problems that hot-humid conditions cause in the rest of the country. In a vented crawl, the insulation should be placed in the floor above the crawl space, properly supported, and in contact with the floor above. There should be no air space between the insulation and the floor. In colder climates, where basements are traditionally the norm, closed conditioned crawl spaces may be the best option to protect freeze-sensitive plumbing systems. From an energy perspective, well-insulated, well-sealed ducts work best in a vented crawl space. While sealing and insulating ducts in a vented crawl is always beneficial in terms of energy savings, there can be unintended consequences that may increase the risk of condensation in heating-dominated climates. In this climate, heat loss to the crawl may help prevent condensation by maintaining higher and more stable temperatures. In cooling climates, properly sealed and insulated ductsâ€™including a vapor barrierâ€™can reduce the risk of condensation on cold supply ducts. In closed crawl spaces, where the air and vapor barriers and the thermal boundary are maintained at the crawl perimeter, the energy benefits of sealing and insulating ductwork are minimal. High relative humidity in fiberglass batt with warm side vapor barrier as wall insulation in a closed crawl space. Below-grade walls cannot dry to the

exterior, so to avoid problems, they must dry to the interior. Vapor barriers on the interior side of batt insulation can create real problems. Figure 1 shows the RH inside a fiberglass batt on the interior of a crawl space perimeter wall. The batt in the figure has a vapor barrier on the interior surface that traps moisture. Removing the interior vapor barrier from the insulation allows drying to the interior of the crawl space, but this may also allow additional condensation on the cold surfaces of the perimeter wall. The best solution in the Figure 1 example is to use rigid-foam insulation with sealed seams, or to use spray foam. The insulation thickness should be determined by the amount of insulation required for thermal performance. Cold Vented with Ducts Figure 2. The results of tests conducted in cold-dry West and Northwest marine climates suggest that vented crawl spaces can work. Monitoring of wood moisture content in the crawls showed no moisture buildup, and while the vented crawl spaces in the test houses did maintain higher RH levels on average than found in closed crawl spaces, the RH levels were not a problem. See Figures 2 and 3. In any crawl space, site water must be properly managed. Vented crawls should be considered only where there is little risk of condensation and no prolonged periods of high RH. Wood Moisture Content Figure 3. Wood moisture content as measured in vented and closed crawl spaces with and without HVAC ductwork in a marine climate. The results showed that vented crawls provide a significantly higher air change rate with the exterior than closed crawls. Vented crawls averaged about 3. Additional radon testing showed that radon levels in the closed crawls "with a relatively low dilution rate" were roughly 10 times the levels measured in the vented crawls. Because the power venting had substantially decoupled the house from the crawl, radon levels within the living area of the homes were still below EPA action levels. Reversing the stack effect with power venting should improve indoor air quality IAQ by decoupling the house from the crawl space. The price of decoupling is the added cost of running and maintaining the crawl space exhaust fan. In closed crawls without power venting, or if the exhaust fan fails, the lower dilution rate creates the risk of a higher concentration of pollutants entering the house from the crawl. Taming the Beast Here are some general tips for taming the beast: If the crawl space has a dirt floor, always maintain a continuous vapor barrier on the floor. Use 6-mil black polyethylene sheeting or better. If there is a high water table or periodic flooding, make sure that the crawl space is sloped to drain to a sump, which can be drained or pumped to daylight. Make sure the outside grade slopes away from the building and that gutter downspouts take water away from the foundation. Maintain the perimeter of the crawl space to prevent access by critters; seal holes, penetrations, and access points and screen all vents. Remove construction debris especially wood, cardboard, or other organic material in contact with the ground. Use radon-resistive building practices in radon-risk areas, as recommended by EPA on their web site. The IRC does not require crawl space ventilation if all of the following conditions are met: A ground cover is provided. This ground cover must include a class 1 vapor retarder with lapped sealed seams, extending at least 6 inches up the stem wall and attached to the wall. The crawl space is conditioned. Conditioning is direct if the crawl space is supplied with conditioned air at the rate of 1 CFM per 50 ft² of crawl area. Conditioning is induced if the crawl space air is power vented to the exterior at 1 CFM per 50 ft² of crawl area and draws conditioned air from the house to the crawl through a transfer grill or duct. The perimeter walls are insulated according to section N For closed conditioned crawl spaces: Insulate the perimeter walls to the level suggested for above-grade walls in your climate. Exterior perimeter wall insulation is a good option to consider, especially in new construction. It eliminates the problems of moisture management associated with interior wall insulation and provides the possible benefits of additional thermal mass within the structure. The downside is you have to protect the insulation from termites and the above-grade portion of the insulation from deterioration caused by weather exposure. When insulating a crawl from the interior, you should protect rim joists from condensation with foam insulation. Use water-resistant insulating materials, such as rigid-foam board or spray foam properly protected to meet fire ratings. Avoid using air-permeable insulation, such as fiberglass batts or spray-on cellulose. Power venting a sealed crawl space to the exterior can reduce the movement of air from the crawl space into the house. This can improve IAQ, but at the added cost of operating and maintaining the exhaust fan. For vented crawl spaces: Insulate the floor above the crawl space to between R and R Provide adequate venting 1 square foot net free area venting per square feet of crawl space. Arrange vents to provide cross-ventilation. Insulate the ductwork

for any heating or cooling system to at least R Maintain a continuous air and vapor barrier on duct insulation where there is a risk of condensation. Protect plumbing pipes from freezing. Insulate the pipes and shelter them from excessive air movement near vents. Heat tapes can use large amounts of electricity, and improperly installed heat tapes may be a fire hazard. Conventional wisdom on crawl spaces over the years has ranged from always vent to always seal. It really depends on local conditions. Properly designed and installed closed crawl spaces can be made to work well almost everywhere. On the other hand, vented crawl spaces are not suited for hot-humid regions where there is a risk of condensation. Closed crawls also come with some risks. Without venting there is a smaller dilution factor and the possibility of higher pollutant concentrations. If you power-vent a crawl space the fan must be used and maintained. In heating-dominated climates, there may be an increased heating load in a closed crawl.

Chapter 8 : Criticism of the Space Shuttle program - Wikipedia

Criticism of the Space Shuttle program stemmed from claims that NASA's Shuttle program failed to achieve its promised cost and utility goals, as well as design, cost, management, and safety issues. More specifically, it failed in the goal of reducing the cost of space access.

Smith Congressional Research Service Summary The Iran Nonproliferation Act of INA was enacted to help stop foreign transfers to Iran of weapons of mass destruction, missile technology, and advanced conventional weapons technology, particularly from Russia. Section 6 of the INA bans U. President determines that Russia is taking steps to prevent such proliferation. The ISS is currently under construction in orbit. Thus, the INA could significantly affect U. This report outlines the history of INA, its effect on Russian and Iranian proliferation, its impact on the ISS program, and options for resolving associated issues. It will not be updated. The Iran Nonproliferation Act P. Long-duration "Expedition" crews composed of Russian and American astronauts have occupied the ISS since November , rotating on month schedules. The United States invited Russia to join in , motivated in part by nonproliferation concerns. On September 2, , Vice President Gore announced that Russia would join the space station program and that Russia had agreed to abide by the MTCR which it would join formally in In , reports surfaced of Russian entities providing ballistic missile assistance to Iran, including training; testing and laser equipment; materials; guidance, rocket engine, and fuel technology; machine tools; and maintenance manuals see CRS Report RL Director of Central Intelligence George Tenet testified to the Senate Intelligence Committee in early that Iran was further along in its ballistic missile program than previously estimated because of Russian help Available at [[http:](http://) The th Congress responded with H. Passed by overwhelming margins, the bill required the United States to impose sanctions against countries that proliferated ballistic missile technology to Iran. President Clinton vetoed the bill on June 23, , objecting to low evidentiary thresholds and mandatory sanctions [[http:](http://) President Clinton forestalled an attempt to override his veto by imposing sanctions on seven Russian entities that Moscow began to investigate in mid-July for alleged illegal exports to Iran. Iran conducted the first test flight of its medium-range Shahab-3 missile that summer, however, and reports of Russian assistance persisted. On January 10, , the Clinton Administration announced economic sanctions against three more Russian institutions. Moscow denied the allegations and protested the sanctions. In addition, it seeks to create new incentives for the Russian Space Agency to cooperate in efforts to stem the proliferation of weapons technology to Iran. Section 6 of the INA concerns payments by the U. Government to Russia in connection with the ISS. Those payments ended because Section 6 prohibits the U. The President must notify Congress five days in advance of making such a determination, and provide a written justification. The act does not include a provision for Congress to approve or disapprove a determination. The President must provide reports or notifications to Congress within specified time limits if the exceptions are used. No determinations, and no other notifications, have been made. At an October 12, House International Relations Committee hearing, NASA was criticized for its broad interpretation of the word "imminent" in the crew safety exception. The United States is obligated to provide such services for at least four people once assembly of the ISS is completed. Prior to the February space shuttle Columbia tragedy, that milestone was expected in The plan was for the ISS to be occupied by sevenperson Expedition crews, with the Soyuz providing crew return for three, and a U. It subsequently initiated a successor, the Orbital Space Plane, but that was canceled a year later. Thus, only Russian Soyuz spacecraft are available for crew return. The last of those 11 Soyuzes is scheduled for launch in October , returning to Earth in April After that, Russia no longer must allocate any of the seats on its Soyuzes for U. It can sell those flight opportunities to whomever it wishes. Russian space officials have repeatedly indicated that they will not continue to provide crew return services to NASA at no cost once their obligations are fulfilled under the Balance Agreement. The shuttle docks at the ISS typically for weeks to exchange crews and provide other services. It is not clear how the other non-Russian partners will cope with the change in U. Also, the shuttle system would be retired once space station construction is completed, now expected in In any case, it is not expected to be available until Therefore, for at least four years , NASA would not be able to launch

astronauts into space at all. Those improvements were not directly attributed to the INA, though. Reports suggest that Iran got significant assistance in its nuclear program from Pakistan; in its chemical weapons program from China; and that it continues to seek assistance from Russia in biological weapons capabilities. However, these relationships predate the INA. Nonetheless, it is clear that the Shahab-3 has not progressed as quickly as analysts thought it would in ; seven years later, Iran has still not fielded the missile in any quantities, although it claims it is operational and in production. Issues and Options A key issue is whether the nonproliferation benefits gained by linking the ISS to Russian proliferation behavior are worth the costs to the U. Although Section 6 may provide incentives for the Russian space agency to cooperate, Russian proliferation to Iran extends beyond the Russian space agency and ballistic missiles to entities involved in other WMD. From a space program perspective, the threshold question is the extent to which NASA needs to have U. Under the Vision, the only U. Questions thus arise as to whether adequate research could be performed on Earth and, eventually, the Moon , or if NASA could pay astronauts from the non-Russian ISS partners to conduct the research. If NASA concludes that it must have its astronauts on ISS, and assuming that the INA is not repealed and the President does not make the determination required by the act, there are several options, though many appear unlikely to be pursued for political, cost, safety, timeliness, or other reasons. Alternatively, the act could be amended to allow NASA to purchase Russian designs, materials, and know-how to set up a Soyuz manufacturing plant in the United States. Or the Bush Administration could conclude that the prohibitions in the act do not apply to the Russian company Energia, which manufactures Soyuz. NASA then could purchase Soyuz spacecraft from that company. The Bush Administration could conclude that the Balance Agreement, which predates the INA, could be used as a mechanism for obtaining the needed services. It must be noted, for example, that even if a method is found to allow NASA to pay Russia, that is only one step in ensuring U. An agreement still would have to be negotiated with Russia on its terms and conditions. Russia could charge too high a price, or set operational procedures with which NASA disagrees, complicating such negotiations. The political relationship between the two countries also could change. The only way to ensure that U. The cost and schedule for these options may be prohibitive, however, and questions remain about the safety of the shuttle it has not yet returned to flight status following the Columbia tragedy , and how many more flights it should make. Parts I and II. October 6, 14, July 29, September 9, and November 3,

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