

THE PRACTITIONER

A monthly newsletter of the Energy Facility Contractors Group's
Project Delivery Working Group



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Greetings Practitioners!

The holiday season is upon us. Ghosts and goblins are beginning to fade away, turkeys running for their lives, and winter wonderlands not far behind. With all the holiday happenings the *Practitioner*, just like the U.S. Postal Service, continues through rain, sleet, snow, and holidays to deliver you valuable project management information.

This month's *Practitioner* explores the National Defense Industrial Association Integrated Program Management Division Guide to the Integrated Baseline Review (IBR). Let's launch into our multi-part series exploration of the NDIA IBR Guide.

Integrated Baseline Reviews — Part 1

While seemingly rare in occurrences, **Integrated Baseline Reviews (IBRs)** are a critical part of the contract award and integrated program management process for major acquisitions and inter/intra agency or organization agreements.

IBRs are required, either pre-award or post-award, to ensure authorized work is adequately planned and resourced, **and to establish a mutual understanding of the risks and opportunities inherent in the Performance Measurement Baseline (PMB).**

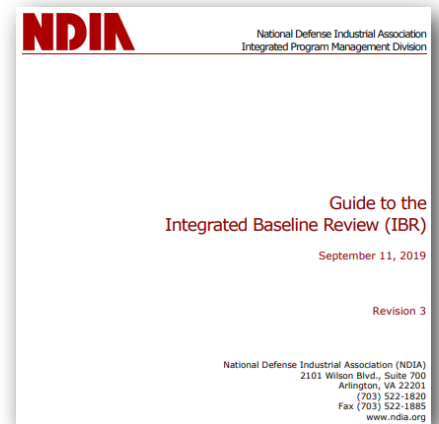
As part of these efforts, both Customer and Supplier can agree on the contents of the risk register, the mitigations for reducible risks, and the margins for irreducible risks, as well as the integrated program management processes used during project execution. **IBRs are performed on the initial contract baseline and whenever there is a significant change to the baseline.** The Customer may require an IBR when the Customer Program Manager (PM) wants to review the PMB to assure both parties have a mutual agreement on the scope of work, resources, and schedule to meet the customer's needs.

The purpose of the National Defense Industrial Association (NDIA) Integrated Program Management Division (IPMD) IBR Guide is to provide guidance for Customer and Supplier PMs as well as their teams for the preparation and execution of an IBR. **NOTE: DOE does not currently have an IBR guide; they instead recommend this NDIA Guide be used.**

This guide identifies the need for an IBR, the types of IBRs, when and how each should be conducted, and the necessity to make the IBR an element of the ongoing project management process. **This guide integrates the IBR process with risk and opportunity management practices** and is intended to improve the consistency of the IBR process for all users.

PMs are strongly encouraged to use this guide, along with applicable agency instructions, during IBR training, in preparation for an IBR and during the IBR event, to achieve optimal results.

This guide uses the terms "contract" or "contractual" for any contract, subcontract, inter/intra agency or organizational transfer work agreement or other agreement. Broadly, these terms are used to refer to the legal document directing the Supplier to perform a defined scope of work. Some organizations may use the term "project charter".



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"Project" and "Program" are used in this guide to identify all work authorized by a contract. Generally, **a project involves a planned effort to achieve a specific outcome**, the progress toward which is discretely measurable. A project has an established scope, schedule, and cost. Programs typically have a longer term and broader scope than projects. Programs usually consist of multiple projects, along with operations, sustainment, and maintenance functions. However, context and size are important. That is, a major program in a small company might be a minor project in large corporation. This IBR Guide focuses on the IBR event irrespective of the doctrinal characterization of project versus program.

Although the IBR process occurs throughout the project/program life cycle, involving continuous assessment of the PMB's executability, the actual review typically is an event within this process. **Unless otherwise stated, the use of the term Integrated Baseline Review (IBR) in this guide refers to the formal IBR event.**

Position, job, and role titles are not standard between government and industry. This guide uses the term "Supplier Control Account Manager (CAM)," or CAM synonymously. However, in another setting this person may be called a "project lead," "task manager," an "Integrated Product Team (IPT) lead," or "team lead." Use of the term of "IPT Lead," as the Customer counterpart to the CAM, is not widely used outside the Department of Defense and in some Federal agencies, the term "G-CAM" (Government CAM) is used to mean the Customer counterpart to the Supplier CAM.

This guide uses the term "Integrated Program Management Report (IPMR)" for current and legacy performance reporting Data Item Descriptions (DIDs) included as a contractual requirement. Existing contracts may reference legacy performance reporting DIDs such as the Contract Performance Report (CPR).

The IBR is concerned more with the technical planning aspects and understanding how a contractor manages a project than other reviews that focus on audit and validation of a contractor's total system compliance with the Standard for Earned Value Management Systems (EIA-748) 32 Guidelines. **The purposes of an IBR are to confirm the contract Performance Measurement Baseline (PMB) covers the entire technical scope of work, the work is realistically and accurately scheduled, the reducible and irreducible risks are reviewed, and the proper amount and mix of resources have been assigned to accomplish all contractual requirements.** A realistic PMB contributes directly to effective management of acquisition programs. **While an IBR may produce disagreements, it is not a pass/fail event.**

The traditional approach to IBRs is to conduct them after the award of a contract or a major contract modification (i.e., the post-award IBR). However, pre-award IBRs are also considered and may be applied, as appropriate, to meet Customer and Supplier needs. For some customers, a Program Level IBR is completed. **The Program Level IBR is specifically associated with the Customer program office.** Often work is completed in support of the contract by the Customer program office or related activities. This work needs to be evaluated against the program management baseline the same as a contract program management baseline.

While the IBR itself is an event, the purpose and objectives should be viewed as a continuing process. **The effort is one of collaboration and mutual respect between the Customer and Supplier, with the aim of achieving a shared understanding of the risks inherent in the PMB and the management control processes needed to execute the program.** The key to a successful IBR is preparation and planning. Anything not supporting the direct aims of the IBR should be moved outside the IBR process.

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IBR Benefits

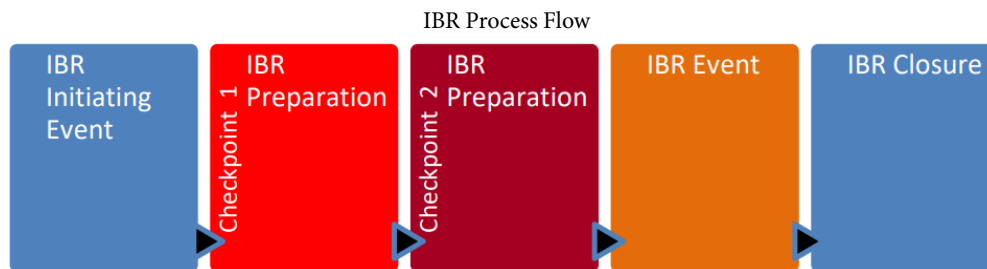
The IBR process benefits PMs in the following ways:

- Promotes Customer PM and Supplier PM knowledge of the PMB.
- Improves communications by enabling a comparison of each PM's understanding of technical/schedule/cost objectives and identification of any differences so they can be addressed.
- **Determines the PMB covers the entire scope of work, is realistic**, and supports achieving all technical/schedule/cost objectives.
- **Provides PM teams with a thorough understanding of the PMB and its risks**, enabling early intervention to mitigate risks, and to exploit opportunities.
- **Verifies that technical performance goals** or functional exit criteria are clearly defined, agreed upon, and documented.
- Ensures meaningful and reliable performance measurement techniques are employed.
- Assesses the PMB ability to provide timely, reliable, and actionable schedule, cost, scope, and risk reduction activities and associated costs.
- **Provides the Customer PM with an understanding of the Supplier's processes for effective and integrated technical/schedule/cost management and measurement.**

Review of the PMB often identifies management risks related to staffing, work sequence and durations, performance measurement methods, processes, and tools. The metrics resulting from the performance management system are intended to provide continuous insight into project performance and health. The management control processes established for the project use the principles of management by exception. This management approach improves problem traceability rather than requiring specific oversight of every task. Ideally, well planned projects coupled with adequate management control processes provide an early warning system to identify potential problems and allow a proactive response.

IBR Process Flow

The figure below illustrates a continuous IBR process for management and staff personnel to develop and maintain a mutual understanding of the project objectives, the PMB, the management processes, and the project risks and opportunities. The IBR process as shown below includes five phases: 1) the IBR Initiating Event; 2) IBR Preparation – Readiness Checkpoint 1; 3) IBR Preparation - Readiness Checkpoint 2; 4) the IBR Event; and 5) IBR Closure.



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IBR Initiating Event

IBRs are initiated at the discretion of the Customer PM or within a reasonable time after the occurrence of a major event in the life of a program that are often defined in the contract. These events may be a contract award, completion of the preliminary design review, completion of the critical design review, a significant shift in the content and/or time phasing of the PMB, or when a major milestone such as the start of the production option of a development contract is reached. A significant shift in the content or time phasing of the PMB can occur due to a re-planning, an Over Target Baseline (OTB) or Over Target Schedule (OTS), or the addition of a significant modification to the contract. The key point is that **a continuous assessment of the PMB will identify when a new IBR should be conducted** as part of the overall risk identification program.

IBR Preparation – Readiness Checkpoint 1

Preparation for the IBR should begin as soon as practical after determining the need for an IBR. The time and effort involved in the IBR depends on the project. Principal factors that influence time and effort include: the project management and risk planning, the authorization/negotiation process, the number, type, and severity of the risks identified during preparation for and execution of the IBR, the size and complexity of the project, and the number and experience level of the IBR team members. As a result, **a number of artifacts need to be prepared and ultimately delivered for use in the IBR** (see Supplier Artifacts in next month's edition). These artifacts are required by both the Customer and Supplier to perform the IBR. The data contained in the artifacts must be reliable, so they are usable during the IBR event. **Readiness Checkpoint 1 ensures the artifacts required are identified and prepared for quality review.**

IBR Preparation – Readiness Checkpoint 2

The ultimate purpose of **Readiness Checkpoint 2 is to support a Go/No-Go decision regarding Customer and Supplier overall readiness to conduct the IBR.** Once the artifacts have been prepared, it is important that both the Customer and Supplier understand their roles and responsibilities in the IBR and be prepared for the actual event.

For example, **before conducting the IBR, the Supplier must ensure that the PMB reflects the complete contractual scope of work and is documented at the appropriate level of detail. For undefinitized contracts, the Customer and Supplier work together to determine timing and appropriateness of a review.** The Customer and Supplier PMs should establish a mutual understanding of the PMB and associated project risks and opportunities as early as possible. The adequacy of the decision is addressed by quality reviews, but also by making sure that both the Customer and Supplier have met the requirements necessary to support the IBR.

IBR Event

While there are many aspects to the IBR event, a critical component is the Program Management Team discussions with the Supplier's personnel responsible for program execution including the PM and CAMs. These discussions focus on key risk areas of technical, schedule, cost, resources, and management processes. The discussions should also address topics identified during IBR preparation. Ultimately an IBR is one element of an iterative, continuous process that provides a structure for Customer and Supplier project management to openly discuss the project's work plans, their various strengths and weaknesses, and the identified risks/opportunities and their associated strategies/plans.

IBR Closure

The final phase of the IBR process is the closure of the IBR event. **Key to this closure is ensuring all Customer and Supplier parties have identified actions addressing PMB risks and opportunities, as well as the mutual**

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understanding of how to address these actions within the management processes the Supplier has implemented.

Continuous communication between the Customer and Supplier is critical to ensure program success.

Initiation of the IBR Process

One of two events typically causes an IBR to be initiated. IBRs are initially contractually required, either pre-award or post-award. IBRs may also be performed whenever there is a significant change to the project's baseline.

Pre-award IBR

The need for an IBR before contract award is determined by the Customer PM and Contracting Officer and depends on the risk associated with establishing an achievable PMB at the time of contract award.

Pre-award IBRs are recommended when there is significant risk. That risk could prevent the traditional source selection process from producing a contract likely to meet its cost, schedule, and performance goals without significant modification during the life of the contract. **It is useful to think of a pre-award IBR as a way to mitigate the risk in source selection when a contractor with a relatively riskier approach may be selected.** While it is not reasonable to expect an offeror to have a fully developed PMB as part of a proposal package, it is reasonable to expect a thorough proposal supported by many of the planning attributes one would see during a post-award IBR.

Pre-award IBRs are complicated by the care needed to avoid "leveling" of proposals through inadvertent sharing of contractor solutions, by the expense of performing parallel reviews for the down selected proposals, and by the added cost which should be borne by the Customer. Refer to Appendix B for more information on pre-award IBR.

New Contract Award, New Program or Project

An IBR is typically required by a new contract or project charter, which may specify unique IBR requirements and thresholds. The Project Plan should identify the contracts and in-house work that will require an IBR, including the flow-down of IBR requirements to major subcontractors. An IBR should be planned for efforts that have significant risk or require more management attention.

Including an IBR clause in a solicitation notifies potential offerors of the Customer's intent to conduct an IBR. In addition to that clause, it is a good idea to provide Suppliers with more details about the IBR to ensure clear expectations are established and any tailored IBR requirements are addressed.

Early in the process, the Customer and Supplier program or project manager should designate key team members to prepare, support, and document the IBR activities and results. The IBR may be phased over time to coincide with the Supplier's planning process and should occur no later than when the PMB is in place. Note: The DoD usually mandates the post-award IBR Process be initiated not later than six months after contract award.

Significant Follow-on Change Actions

The IBR is not necessarily a one-time event in the program life-cycle. Any event that yields a substantive change to the PMB may require another IBR.

The Customer PM decides when a subsequent IBR is needed to ensure remaining work is adequately planned and resourced and to confirm there is a mutual understanding of the risks and opportunities inherent in that work. However, just because an event has occurred that led to a change in the PMB, it does not automatically mean an IBR is required. The respective Customer and Supplier PMs may elect to continue reliance on the ongoing management processes.

The following events or actions may affect the PMB and may prompt a decision to conduct a subsequent IBR:

- **Baseline (PMB) Changes.** During contract execution, any number of events can cause a PMB change, for example, a customer-directed scope change. Only significant changes to the PMB would prompt another IBR. "Significant" is subjective and therefore warrants a conversation between the Customer and the Supplier PMs; however, the Customer PM is the ultimate decision maker.

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- **Contract Execution Risk Changes.** Mutual identification and understanding of program risks is a primary purpose for an IBR; however, as program execution progresses, unknown risks may occur, as well as known risks that are not materializing as expected. As these events are realized, the Customer and Supplier PM must discuss alternatives, address a mitigation plan, and decide whether the events are significant enough to require another IBR. Small changes (e.g., rain delayed an outside activity by one day) would not require a major PMB change nor necessitate an IBR event.
- **Acquisition Strategy Changes.** Any significant changes to the acquisition strategy may require an IBR. The acquisition strategy affects technical, schedule, performance, and resources, so changes will flow throughout the program, affecting risks and opportunities.
- **Funding Profile Changes.** Shifts (i.e., delays or advances) in the availability of funds can lead to project de-scoping or affect the timing of when the work can be performed, resulting in contract changes. Another example is when multi-year projects are funded on an annual basis. An IBR may be required to confirm the changes to scope, schedule, and budget to accommodate the revised funding profile.
- **Over Target Baseline (OTB)/Over Target Schedule (OTS).** The normal course of project planning involves work definition, scheduling, and resource loading. If these steps are done in a logical and rational way, performance measurement data generated during the execution phase will be a leading indicator of the need for an OTB/OTS. The contractor should continually analyze performance measurement data and compare the estimate of cost for the remaining work to the remaining baseline value. Recognition of a significant projected cost overrun, or inability to achieve schedule, normally indicates the need for formal reprogramming and potentially an IBR.

Well, that's all for this issue, but stay tuned for next month's *Practitioner* when we will continue with our NDIA IBR Guide exploration, picking back up at the [IBR Preparation – Readiness Checkpoint 1: Identification of Key Program Elements](#).

It Is Not One World

What's the construction economy outlook for 2025? Experts are cautiously optimistic

By: Johnny Bradigan on November 22, 2024

The U.S. is spending more on commercial construction this year, but economists view the outlook for 2025 with cautious optimism. That was the consensus during ConstructConnect®'s fall 2024 webinar, "[The Construction Economy Outlook: 2025 Starts Now.](#)"

Several leading economists offered their insights on the state of the industry, including **Michael Guckes**, ConstructConnect's Chief Economist; **Kermit Baker**, Chief Economist for the American Institute of Architects (AIA); and **Ken Simonson**, Chief Economist for the Associated General Contractors of America (AGC). They were also joined by **Kristy O'Brien**, ConstructConnect's Director of Content Acquisition.

Here are the top five takeaways from the webinar.



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2025 Construction Economic Outlook

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1. Spending is up, but expected to slow in 2025

According to numbers from the United States Census Bureau, non-residential commercial construction spending has increased by almost 7% this year compared to 2023. Baker says that's healthy growth but predicts that month-by-month drops in spending mean we will really close the year with a growth rate of about 5% to 5.5%.

Spending is expected to fall even more in 2025. Citing the most recent [AIA Consensus Construction Forecast Panel survey from July 2024](#), Baker says forecasters predict total non-residential spending to grow only 2% next year.

While these are still technically increases, Baker is quick to point out that they continue to get smaller.

2. Manufacturing, warehouses, data centers playing their role in 2024

Baker says, "[Manufacturing, warehouses, and data center projects] have had an outsized impact on the trends we're seeing in the non-residential building market."

The Census Bureau reports that spending on manufacturing projects has grown by 23% in 2024.

A curious statistic is found in office construction spending, which has risen by 1.8% this year. Baker acknowledges that the office category is historically the weakest in commercial construction. He says the noted increase in spending is because the Census Bureau considers data centers a part of the office category.

Data centers are facilities housing computer systems and servers for data storage and processing. They continue to be big business. In late November 2024, Meta announced it would spend \$5 billion on a data center project in rural Louisiana.

When it comes to all non-residential commercial construction spending in 2024, the Census Bureau says:

- Data centers make up 3% of all spending.
- Warehouse construction has fallen from peak numbers in 2022 but still makes up 7% of spending.
- The manufacturing category continues to be the biggest spending driver. More than 27% of all non-residential projects this year have been manufacturing.

3. Labor is still a mixed bag

Labor shortages continue to be a challenge. A recent AGC survey found that more than 90% of contractors report trouble finding both hourly and salaried positions. Those figures were in the 80% range just last year.

Despite these figures, Simonson says employment in non-residential construction is up nearly 4% in 2024. That's according to the [U.S. Bureau of Labor Statistics](#), which also says 40 states report an increase in construction employment. Alaska, Hawaii, Oklahoma, Nevada, and Montana are the five states with the biggest increases.

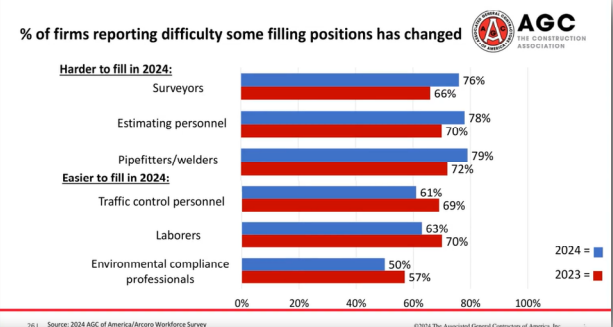
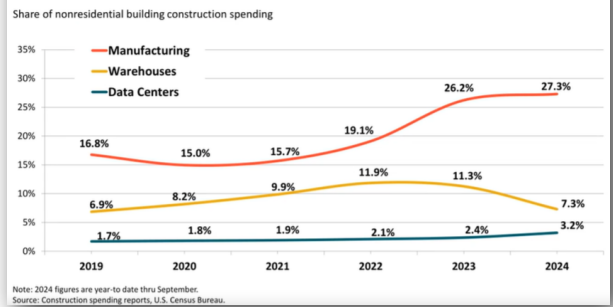
Moving through 2024, construction spending growth beginning to slow, particularly in the commercial sector

Billions of \$, Jan-Sep 2024 vs. Jan-Sep 2023 totals

	2023	2024	% Change
Total Nonresidential Building Construction	\$586.6	\$626.7	6.8%
Commercial/ Industrial	\$339.4	\$359.1	5.8%
Lodging	\$18.6	\$17.5	-5.8%
Office	\$74.2	\$75.5	1.8%
Commercial (retail & other)	\$107.6	\$94.9	-11.8%
Manufacturing	\$139.0	\$171.2	23.2%
Institutional	\$247.2	\$267.5	8.2%
Healthcare	\$48.3	\$50.9	5.5%
Education	\$90.3	\$98.3	8.8%
Religious	\$2.7	\$3.0	11.9%
Public Safety	\$10.3	\$14.1	36.8%
Amusement & Recreation	\$26.7	\$29.8	11.5%
Transportation	\$48.7	\$50.5	3.8%
Communication	\$20.2	\$20.8	2.9%

Source: U.S. Census Bureau, Value of Construction Put in Place

The share of construction spending for manufacturing, warehouses, and data centers has grown dramatically



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2025 Construction Economic Outlook

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Oregon reported the biggest loss, with a 4% drop in construction jobs. Maryland, Maine, Vermont, and New York complete the bottom five states.

"Nevertheless," Simonson says, "contractors tell us that finding workers is still their number one challenge."

He adds that the hardest roles to fill continue to be trained positions, such as surveyors, estimators, pipefitters, and welders. However, he does say firms have reported finding it easier this year to fill entry-level positions, like traffic control and general labor.

"People who shunned construction because they thought they could get an indoor job, perhaps with flexible hours, [are now] finding those aren't so available, or they're not paying as well as construction. So, more people are showing up to apply for entry-level construction jobs," Simonson theorizes.

4. Bidding is up in the U.S.

Bidding on U.S.-based construction projects rose by about 5% this year, according to data collected by O'Brien's Content Acquisition team at ConstructConnect. Her team collaborates with companies, contractors, and other professionals to curate and verify active and upcoming construction projects across North America.

The increase in bids indicates more new projects as well. O'Brien notes that the U.S. is experiencing a 7% increase in new construction projects compared to 2023's numbers.

5. Expect to see more hotels, stores, and even military projects in 2025

Of the nearly 30 different types of U.S. commercial construction that ConstructConnect collects data on, Guckes says nearly 75% are expected to experience strong growth next year.

This growth is driven by a predicted 56% increase in military project spending, an almost 28% rise in hotel projects, and a projected 25% increase for shopping and retail.

"Part of that is just a turnaround story," Guckes explains. "The military sector really struggled this year, and hotels and motels had a similar experience. Some areas where we saw weaknesses in '24 are expected to see strong rebounds in '25."

Conversely, some areas that experienced growth in 2024 will likely see declines in projects next year, including prisons and airports.

Wrapping up

The outlook for the U.S. construction industry in 2025 combines both optimism and caution. While commercial construction spending continues to grow, it will likely do so at a slower rate next year. Despite an increase in entry-level construction staffing, finding experienced help is still a challenge. Still, companies are bidding on more projects.

As is the case every year, it will be important for contractors and firms to keep a keen eye on market factors and trends in 2025.

— From the [ConstructConnect blog](#)

Project Management — What "They" Say:

**"Vision without action is a dream.
Action without vision is simply
passing the time. Action with Vision
is making a positive difference."**

— Joel Barker, futurist, author and lecturer



Just for Fun: December's Notable Events and Famous Birthdays

Notable Events

- 1 – The first moving assembly line went into operation (1913), and Rosa Parks began the Montgomery bus boycott (1955).
- 2 – Napoleon was crowned emperor of France (1804), the Monroe Doctrine was declared (1823), Enrico Fermi produced the first nuclear chain reaction (1942), **Archie Griffin won his second Heisman Trophy** (1975), and the first hydrogen fuel-cell cars were introduced in the U.S. (2002).
- 3 – Illinois became a state (1818), the first human heart transplant was performed (1967), and 2,000 people were killed in an explosion at a pesticide plant in India (1984).
- 4 – Woodrow Wilson became the first U.S. president to travel to Europe (1918), and American exchange student Amanda Knox was convicted of murdering her roommate in Italy (2009).
- 5 – Prohibition ended (1933), and anti-apartheid activist Nelson Mandela (2013) died.
- 6 – The Washington Monument was completed (1884), the worst U.S. mining disaster occurred when 361 coal miners were killed in an explosion in West Virginia (1907), the largest man-made pre-atomic explosion occurred at Halifax Harbor when two ships collided (1917), and Jerry Rice broke the NFL's all-time touchdown reception record with his 101st (1992).
- 7 – Delaware became the first state (1787), Japan attacked Pearl Harbor (1941), the first execution by lethal injection took place in Texas (1982), and two earthquakes killed 60,000 people in Armenia (1988).
- 8 – Chicago beat Washington 73-0 in the NFL championship game (1940), the U.S. declared war on Japan (1941), John Lennon was shot and killed (1980), the first nuclear arms reduction treaty between the U.S. and Soviet Union was signed (1987), and NAFTA was signed into law (1993).
- 9 – U.S. Marines landed in Somalia (1992).
- 10 – Wyoming became the first state to allow women to vote (1869), the Spanish-American war ended (1898), **the first Nobel Prizes were awarded** (1901), singer Otis Redding was killed in a plane crash (1967), and LaDanian Tomlinson broke the NFL single-season touchdown record with his 29th (2006).
- 11 – Germany declared war on the U.S. (1941), UNICEF was founded (1946), singer Sam Cooke was shot to death (1964), and Russia invaded Chechnya (1994).
- 12 – The first trans-Atlantic radio transmission was conducted (1901), Gayle Sayers scored an NFL record-tying six touchdowns in one game (1965), one of Leonardo da Vinci's notebooks sold for \$5.1M (1980), and GM announced its phase-out of Oldsmobile (2000).
- 13 – New Zealand was discovered (1642), Detroit beat Denver 186-184 in the highest-ever scoring game in the NBA (1983), and Iraqi dictator Saddam Hussein was captured (2003).
- 14 – George Washington died (1799), the first study of quantum theory was published (1900), Roald Amundsen reached the South Pole (1911), and the Sandy Hook school shooting occurred (2012).
- 15 – The Bill of Rights was ratified (1791), **Sioux chief Sitting Bull was killed** (1890), the rotary engine was patented (1896), and bandleader Glenn Miller's airplane disappeared (1944).
- 16 – The Boston Tea Party took place (1773), the greatest series of earthquakes in U.S. history occurred in Missouri (1811), the Battle of the Bulge began (1944), and OJ Simpson became the first NFL player to rush for over 2,000 yards in one season (1973).
- 17 – The Wright brothers successfully flew the first airplane (1903), Stan Barrett became the first person to break the sound barrier on land (1979), *The Simpsons* debuted on TV (1989), and Terrell Owens caught an NFL-record 20 passes in one game (2000).
- 18 – The Mayflower arrived at Plymouth (1620), the first national day of thanksgiving was celebrated (1777), and the 13th Amendment abolishing slavery was formally adopted into the Constitution (1865).
- 19 – Charles Dickens' *A Christmas Carol* was published (1843), the NHL began its first season (1917), the last *Apollo* lunar-landing mission ended (1972), the blockbuster movie *Titanic* premiered (1997), and President Bill Clinton was impeached (1998).
- 20 – The French surrendered Orleans to the U.S. (1803), Elvis Presley was drafted into the Army (1957), hockey star Guy Lafleur scored his 500th goal (1983), and the U.S. invaded Panama (1989).
- 21 – Gen. George Patton died in a car accident (1945), *Apollo 8* launched as the first manned mission to the moon (1968), and a jetliner exploded over Scotland, killing all 243 passengers (1988).
- 22 – Beethoven's Fifth Symphony premiered (1808), the first Mercedes was sold (1900), and the L.A. Lakers broke the pro sports winning streak record with its 27th consecutive win (1971).
- 23 – Franco Harris caught the "Immaculate Reception" in the AFC championship game (1972).
- 24 – The War of 1812 ended (1814), the KKK was founded (1865), President Coolidge lit up the first national Christmas tree at the White House (1923), and the Soviet Union invaded Afghanistan (1979).
- 25 – Bing Crosby first sang "White Christmas" (1941), Soviet president Mikhail Gorbachev resigned (1991), young beauty queen JonBenet Ramsey was murdered (1996), and New Mexico kicker Katie Hnida became the first female to play in a Division I college football game (2002).
- 26 – Jack Johnson became the first black heavyweight boxing champ (1908), **Kwanzaa was first celebrated** (1966), and an estimated 230,000 people died from a tsunami in Southeast Asia (2004).
- 27 – Radio City Music Hall opened in New York City (1932), and Peyton Manning broke the NFL's single-season touchdown passing record with his 49th (2004).
- 28 – The first Labor Day in the U.S. was observed (1869), the first commercial movie was screened in Paris (1895), and the worst-ever earthquake in Europe killed an estimated 100,000 people (1908).
- 29 – Texas became a state (1845), and the Massacre at Wounded Knee took place (1890).
- 30 – The border between the U.S. and Mexico was established (1853), more than 600 people were killed in a fire at a Chicago theater (1903), and the USSR was established (1922).
- 31 – Thomas Edison demonstrated the first incandescent light (1879), baseball star Roberto Clemente (1972) and singer Rick Nelson (1985) were killed in plane crashes, and Panama took possession of the Panama Canal from the U.S. (1999).



Birthdays

- 1 – Singer Lou Rawls (1933), actor/director Woody Allen (1935), golfer Lee Trevino (1939), comedian Richard Pryor (140), and singer Bette Midler (1945)
- 2 – Circus guy Charles Ringling (1863), TV journalist Stone Phillips (1954), actress Lucy Liu (1967), tennis star Monica Seles (1973), and pop singer Britney Spears (1981)
- 3 – Rocker Ozzy Osbourne (1948), actress Daryl Hannah (1960), Olympic champ figure skater Katarina Witt (1965), and actor Brendan Fraser (1968)
- 4 – Actor Jeff Bridges (1949), actresses Marisa Tomei (1964) and Tyra Banks (1973), and rapper-turned-country star Jelly Roll (1984)
- 5 – 8th U.S. President Martin Van Buren (1872), **General George Custer** (1839), animator Walt Disney (1901), singer Little Richard (1932), and actors Michael Dorn (1952) and Frankie Muniz (1985)
- 6 – Songwriter Ira Gershwin (1896), jazz pianist Dave Brubeck (1920), and comedian Steven Wright (1955)
- 7 – Actor Ted Knight (1923), musicians Harry Chapin (1942) and Gregg Allman (1947), baseball Hall of Famer Johnny Bench (1947), and basketball Hall of Famer Larry Bird (1956)
- 8 – Inventor Eli Whitney (1765), entertainer Sammy Davis Jr (1925), comedian Flip Wilson (1933), singer Jim Morrison (1943), actresses Kim Basinger (1953) and Teri Hatcher (1964), and singer Sinead O'Connor (1966)
- 9 – Actor Kirk Douglas (1916), comedian Redd Foxx (1922), actors Dick Van Patten (1928), Beau Bridges (1941) and John Malkovich (1953), and singer Donny Osmond (1957)
- 10 – Poet Emily Dickinson (1830), library organizer Melvil Dewey (1851), actor Dan Blocker (1928), and actress Susan Dey (1952)
- 11 – Actresses Rita Moreno (1931) and Donna Mills (1942), singer Brenda Lee (1944), actress Teri Garr (1945), and musician Jermaine Jackson (1954)
- 12 – Actor Edward G. Robinson (1893), entertainer **Frank Sinatra** (1915), TV game show host Bob Barker (1923), and singers Connie Francis (1938), Dionne Warwick (1941) and Sheila E (1959)
- 13 – Actors Dick Van Dyke (1925) and Christopher Plummer (1927), rocker Ted Nugent (1947), and pop sensation Taylor Swift (1989)
- 14 – Prognosticator Nostradamus (1503), WWII hero Gen. James Doolittle (1896), and actresses Lee Remick (1935) and Patty Duke (1946)
- 15 – Philanthropist J. Paul Getty (1892), funnyman Tim Conway (1933), musician Dave Clark (1942), and actor Don Johnson (1949)
- 16 – Composer Ludwig van Beethoven (1770), anthropologist Margaret Mead (1901), actress Liv Ullmann (1938), and actor Benjamin Bratt (1963)
- 17 – TV personality Gene Rayburn (1917) and actor Bill Pullman (1954)
- 18 – Baseball Hall of Famer Ty Cobb (1886), actress Betty Grable (1916), director Steven Spielberg (1946), actor Brad Pitt (1964), pro wrestler "Stone Cold" Steve Austin (1964), actress Katie Holmes (1978), and singer Christina Aguilera (1980)
- 19 – Arctic explorer Sir William Parry (1790), actress Cicely Tyson (1933), actors Tim Reid (1944) and Robert Urich (1946), football Hall of Famer **Reggie White** (1961), and actress Alyssa Milano (1972)
- 20 – Actor Kiefer Sutherland (1966)
- 21 – Soviet dictator Joseph Stalin (1879), legendary college football coach Joe Paterno (1926), TV talk show host Phil Donahue (1935), actress Jane Fonda (1937), musician Frank Zappa (1940), funnyman Ray Romano (1957) and Olympic champion sprinter Florence Griffith Joyner (1959)
- 22 – Actress Barbara Billingsley (1922), TV journalist Diane Sawyer (1945), singing twins Maurice and Robin Gibb (1949), and women's golf legend Jan Stephenson (1951)
- 23 – Mormon Church founder Joseph Smith (1805), actor Harry Shearer (1943), and actress Susan Lucci (1948)
- 24 – Frontiersman Kit Carson (1809), rich guy Howard Hughes (1905), actress **Ava Gardner** (1922), singer Ricky Martin (1971), and TV host Ryan Seacrest (1974)
- 25 – Scientist Sir Isaac Newton (1642), Red Cross founder Clara Burton (1821), actor Humphrey Bogart (1899), singer Jimmy Buffett and football Hall of Famer Larry Czonka (1946), singer Barbara Mandrell (1947), actress Sissy Spacek (1949), and funnyman Norm Macdonald (1962)
- 26 – Entertainer Steve Allen (1921) and actor Jared Leto (1971)
- 27 – Astronomer Johannes Kepler (1571), chemist Louis Pasteur (1822), and TV journalist Savannah Guthrie (1971)
- 28 – 28th U.S. President Woodrow Wilson (1856), and actor Denzel Washington (1954)
- 29 – 17th U.S. President Andrew Johnson (1808), actress Mary Tyler Moore (1937), and actors Jon Voight (1938) and Ted Danson (1947)
- 30 – Author Rudyard Kipling (1865), blues musician **Bo Diddley** (1928), baseball Hall of Famer Sandy Koufax (1935), TV host Matt Lauer (1957), actresses Tracey Ullman (1959) and Julianne Moore (1960), golfer Tiger Woods (1975), and basketball star LeBron James (1984)
- 31 – Painter Henri Matisse (1869), actor Anthony Hopkins (1937), singers John Denver (1943) and Donna Summer (1948), and actor Val Kilmer (1959)

