



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

Issue 23

June 2021

Hello summer, hello rolling wave

Summer is here and things are beginning to heat up. Face-to-face meetings are beginning to happen, conferences are scheduled, and folks are beginning to travel. The recent EFCOG Annual Meeting is now behind us. Based on the report out from the Working Group Chairs Meeting it promises to be a busy time of year, with a strong finish.

One of the key points from both the PDWG Chair (Amy Basche), and our PDWG DOE Liaison (Paul Bosco) emphasized the importance a good Integrated Master Schedule (IMS), including Rolling Wave Planning, IMS Reasonableness, and IMS quality.

To get us started on a path forward to IMS improvement, this month's edition of "The Practitioner" takes a re-look at "Rolling Wave Planning" guidance as outlined in: National Defense Industrial Association Integrated Program Management Division, *Planning & Scheduling Excellence Guide (PASEG) September 12, 2019 Version 4.0 - © 2019 NDIA IPMD*, and U.S. Government Accountability Office (GAO), *Schedule Assessment Guide - Best Practices for Project Schedules - GAO-16-89G*, respectively.

Let's be honest; "Rolling Wave Planning" is talked about much more than implemented, even while the benefits appear to outweigh the alternative approaches currently in place on many contracts. Many contractors detail planned multiple years of scope in work packages, creating a self-imposed change control nightmare.

Most of us do not have a detailed plan for tomorrow...let alone 2-5 years down the road with complex scope to perform. Detail planning multiple years of scope without the benefit of knowing what worked and what did not, knowledge of changing conditions, requirements, or expectations is not a recipe for success. Simply put, detail planning work packages beyond the near term is high risk with little or no reward.

So with that said, let's revisit what the experts have to say about rolling wave planning, and why we should be implementing it. First up is the NDIA IPMD PASEG...followed by the GAO.

***Is your data and info **C**urrent, **A**ccurate, **C**omplete,
Repeatable, **A**uditable and **C**ompliant[©]?***

Rolling Wave Planning — NDIA

Rolling Wave planning is an incremental approach that helps program management focus on more immediate work with a detailed schedule and far term schedules planned at a higher level until the program better understands the details about the scope, cost and delivery requirements of that effort. As the program progresses and requirements are refined, the program extends the detailed schedule into the future as a 'rolling wave' of planning. This concept allows program personnel to provide clarity where needed while saving unnecessary time and expense developing plans where details cannot be clearly defined. Rolling Wave planning can be especially beneficial to programs where the Statement of Work (SOW) is likely to change.

Description

The Rolling Wave concept pulls together two schedule development approaches; Top-down and bottom-up planning. Top-down planning is the process of breaking down into detail a schedule starting with the major milestones. For example, a schedule based on an RFP with desired review and delivery dates can be broken down into summary schedules to support those milestones. Because the full scope of the effort is undefined, these schedules provide a framework for the program but recognize that more information from the review process is necessary to provide specifics for the work. Additionally, programs can employ bottom-up planning when the program knows that detail. Armed with this knowledge, the program can define the specific tasks, durations, relationships and resources to complete the work. The goal of the rolling wave planning exercise is to balance the framework of the scope, date and cost requirements of the top-level plan with the organization's capabilities and the specific requirements in the detailed plan. The program can then extend the detail plan into the future, as the program understands additional information about the program goals and requirements.

In rolling wave planning, the IMS usually contains near term detailed information in work packages. These work packages are composed of one or more IMS tasks, are shorter in duration, and have necessary logic ties to all other tasks. Additionally, these elements are either resource loaded or linked to resource and cost budgets in other management systems. These work packages represent a specific plan for accomplishing the near term program goals and, in an EVM System, are the basis for the time-phased Performance Measurement Baseline (PMB) and the Estimate to Complete (ETC). They also have assigned earned value measurement techniques to provide performance measurement against the plan for analysis and issue resolution.

For planning outside of the Current Detail Plan Period, Planning Packages represent work defined at a higher level of detail. Planning Packages have almost all the same characteristics of work packages. Their average durations may be longer than detail tasks, but like detail tasks, they also have logical relationships with other tasks in the

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EFCOG's Project Delivery
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NDIA Rolling Wave Planning

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IMS so a Critical Path may be determined. They have associated resource cost budgets and forecasts to support the scope they represent, providing that information in the EVM System to maintain the PMB and forecast. However, because Planning Packages lack sufficient detail for measured progress, EVM performance data is limited until the detailed planning is available.

During the initial development phase of a new program, the program establishes detailed work packages for the first phase of the program and planning packages for the remaining effort. How far into the future work packages are planned is determined by several factors including; event phasing, program risk level, quality of the requirements, experience with similar programs and common sense. However, a balance should be struck between having enough accurate detail in the current 'planning horizon' to manage the program without extending the detailed planning so far out in time that changes to the plan are frequently required to keep it relevant.

To help provide guidance for determining the period of the planning horizon, the program effort is usually detail planned to the next program phase, major milestone, or event. This approach allows the schedule to develop based upon increased understanding of the requirements discovered during the progression of the program. In the initial program phase, the planning windows tend to be shorter during the requirements definition and design review phases and grows longer as the program matures into the development and deployment phases.

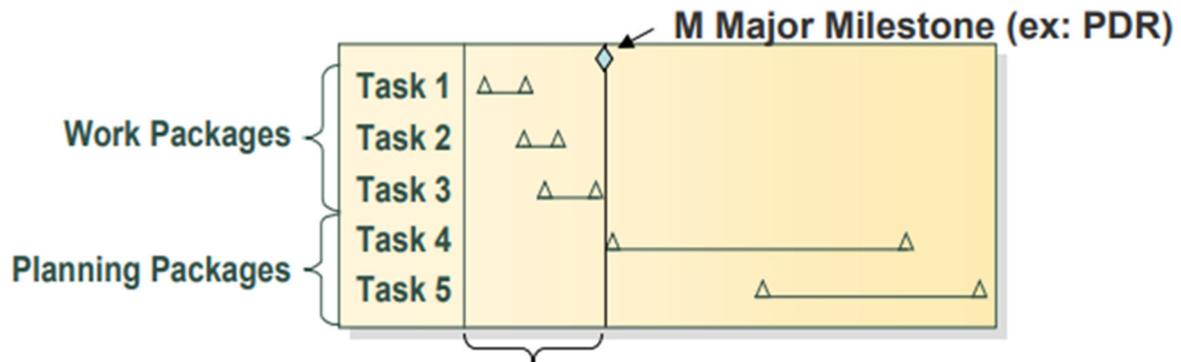


Figure 9.2.2-1 Detail Planning Window

Before the first planning window ends, the process of developing the next period of detail begins. Programs should precede rolling wave exercises with instructions to the participants for goals and expectations of the exercise. These instructions usually contain the duration of the next planning window, quality discussions, an implementation schedule, methods of integration, and a schedule of management review meetings necessary to assure a smooth transition to the next level of schedule development. Program should repeat this process as necessary throughout the life cycle of the program.

In some cases, programs implement rolling wave planning based not on Event-to-Event gates but upon other increments such as revisions, updates or blocks. This approach, referred to as Block Planning, describes the increasing detail of the schedule based upon logical building blocks of information. While not all blocks contain the exact information, they are similar in structure to each other. For example, software block planning may have different features as the goal of each

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NDIA Rolling Wave Planning

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block. This creates minor variations in each block when detailed from planning packages to work packages, but the basic structure for updating the particular block revision is the same.

In other cases, programs cannot easily align its detail-planning window with periodic IMP Events or Major milestones or the time between Events or Milestones may be greater than practical planning can support. To address these situations, the detail-planning window could extend to a relevant defined period, rather than the conclusion of an IMP Event or major milestone.

For example, if the minimum level of detail is 3 months, then the program may decide to plan for 6-month intervals and conduct rolling wave exercises every 3 months until conditions change or the program ends.

Example

An example of a 3-month rolling wave:

At the beginning of the effort, only three months are detail planned as shown in Figure 9.2.2-2. To maintain the 3-month look-ahead in the IMS, the Planning Package represented by Task 4 in Figure 9.2.2-2 is detail planned to detailed Tasks 4-6 as shown in Figure 9.2.2-3.

Task 7 in Figure 9.2.2-3 captures the remainder of the Planning Package Period of Performance and budget, allowing decomposition into detailed tasking later, though the program may choose to detail these details now if sufficient knowledge of the details exists.

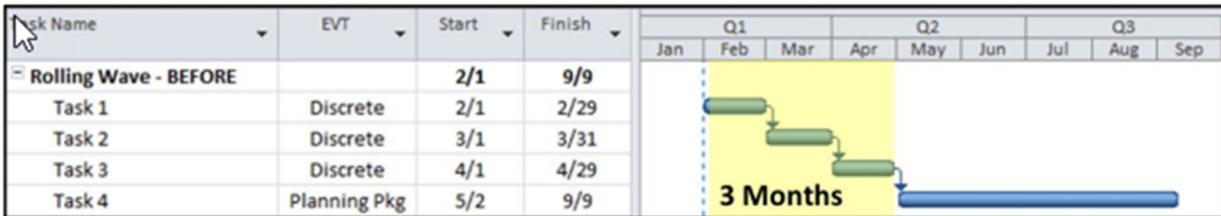


Figure 9.2.2-2 Three months of detail tasking and a Planning Package.

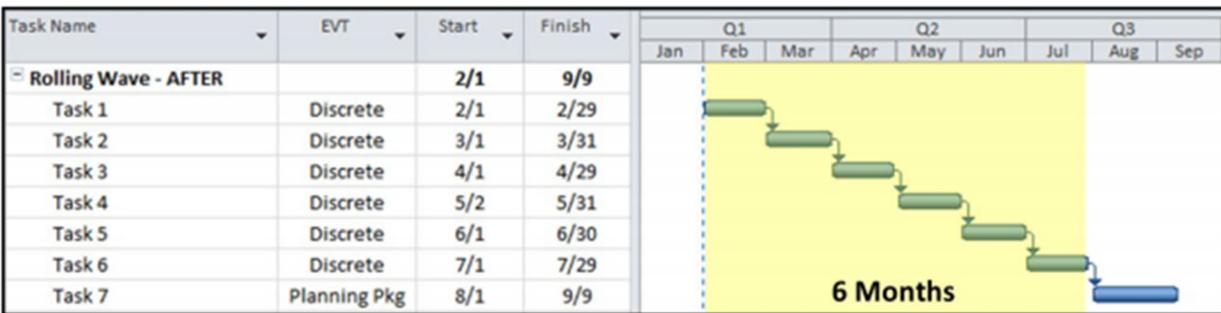


Figure 9.2.2-3 After detailing Task 4 in Figure 9.2.2-2, we have 6 months of discrete tasking and a newly created Planning Package for the balance of the Period of Performance.

Things to Promote

- Find a balance between enough near-term detailed planning to be managerially useful but not so far out in the future to require constant changing.

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NDIA Rolling Wave Planning

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- Use documentation with a level of fidelity similar to the “Basis of Estimate (BOE)” in the proposal phase as part of the BCR process.
- Periodically review the planning horizon over the life of the program to determine if the rolling wave methodology still meets the program needs. Consider using different planning windows on different aspects of the program depending on baseline volatility.
- During the rolling wave, CAMs should re-evaluate all work within the wave, not just the new work planned.
- Programs should break down Planning Packages that are on or near the Critical Path/Driving Path or carry a high degree of risk into smaller elements to facilitate schedule analysis and risk mitigation.
- Detail plan beyond the rolling wave period if possible and reasonable.
- Ensure that the appropriate program stakeholders participate in the Rolling Wave process and validate the resultant detail plan to help garner buy-in and ownership.
- When decomposing Planning Packages into task details ensure you also consider their impact to the total program IMS. Use sound, logical relationships that accurately represent the total program’s workflow.

Things to Avoid

- Avoid permitting work to remain in planning packages during the current accounting period.
- Avoid establishing tasks in the planning window without network logic.
- Avoid artificially “cutting off” tasks to finish at the end of the rolling wave or detail planning window. Work Packages can be detail planned outside of the rolling wave window or detail planning window.
- Avoid incorporating out of scope changes into the PMB during a Rolling Wave process, without considering contractual implications.
- Avoid reducing durations of planning packages to hold end dates. While they are not fully detailed, Planning Packages should still contain realistic durations necessary to achieve the task.

— From the National Defense Industrial Association Integrated Program Management Division
Planning & Scheduling Excellence Guide (PASEG) September 12, 2019 Version 4.0 - © 2019 NDIA IPMD

Rolling Wave Planning — GAO

As discussed in Best Practice 1, a comprehensive IMS should reflect all the activities of a program and should recognize that uncertainties and unknown factors in schedule estimates can stem from, among other things, limited data. A schedule incorporates different levels of detail depending on the information available at any point in time. Near-term effort will be planned in greater detail than long-term effort.

Detailed activities within a low-level schedule represent tasks that are typically 4 to 8 weeks long.¹⁵ They reflect near-term, well-defined effort, typically within 6 months to a year of the

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GAO Rolling Wave Planning

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current date. But it is often difficult to forecast detailed work clearly beyond 9 to 12 months. In general, the length of the near-term detail planning period should be decided by program management. It depends on the project's size, phase, scope, risk, and complexity. For example, some schedules may be planned in detail for only 2 or 3 months.

Effort beyond the near term that is less well defined is represented within the schedule as planning packages. Planning packages summarizing work in the distant future can be used as long as they are defined and estimated as well as possible. Planning packages are planned at higher levels such that a single activity may represent several months of effort, generic work to be accomplished by a trade or resource group, or even a future contract or phase.

As time passes and future elements of the program become better defined, planning packages are broken into detailed work packages. This incremental conversion of work from planning packages to work packages is commonly known as "rolling wave" planning. Rolling wave planning continues for the life of the program until all work has been planned in detail. A best practice is to plan the rolling wave to a design review, test, or other major milestone rather than to an arbitrary period such as 6 months.

Moreover, detail should be included in the schedule whenever possible. That is, if portions of far-term effort are well defined, they should be included in the IMS as soon as possible. However, care should be taken not to detail ill-defined far-term effort so soon as to require constant revision as time progresses. More detail does not necessarily mean greater accuracy, and pursuing too much detail too early may be detrimental to the schedule's quality.

While planning packages represent far-term effort that has not yet been planned in detail, each planning package must still be traceable to WBS elements within the IMS. Moreover, planning packages should be logically linked within the schedule to create a complete picture of the program from start to finish and to allow the monitoring of a program's critical path. Planning packages that are on or near the critical path or that carry significant risk should be broken into smaller activities to better understand workflow. As durations and resource assignments are refined over time, so too is the detailed sequence of activities.

Appendix III (of this GAO Schedule Assessment Guide) provides more information on work packages, rolling wave planning, and earned value management.

*— From the U.S. Government Accountability Office (GAO)
Schedule Assessment Guide - Best Practices for Project Schedules – GAO-16-89G*

The NDIA PASEG and GAO Schedule Assessment Guide Best Practices for Project Schedules are in PM MAX, at the links below:

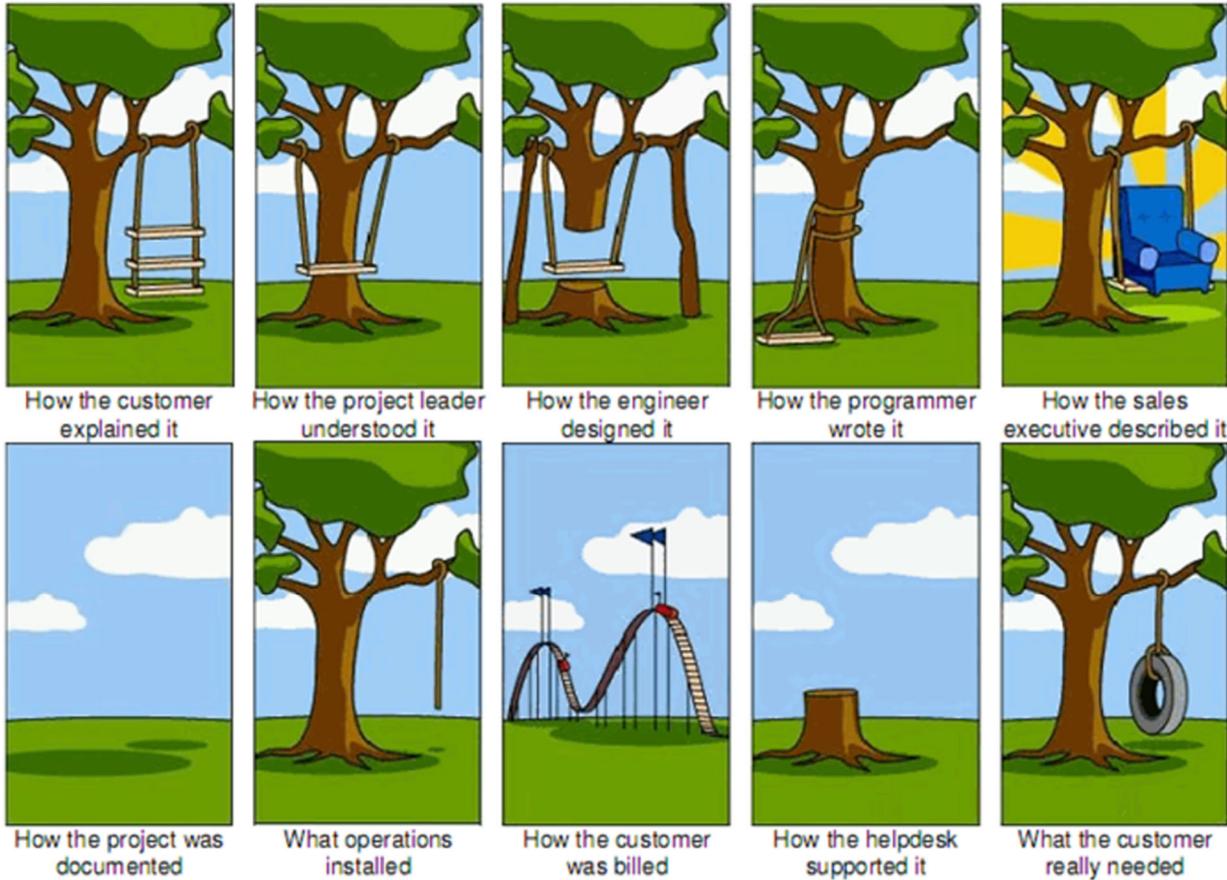
PM EVM Guidance

<https://community.max.gov/display/DOEExternal/PM+EVM+Guidance>

PM Max Project Management Library

<https://community.max.gov/display/DOEExternal/PM+Library>

It is Not One World — What We Do and How We Do It Matters



As funny as the illustration (above) is, it may be surprising to many when realizing how often we miscommunicate our expectations and misinterpret what we’re asked to do. To further illustrate how communication can fail in a humorous way, click on the frame still at right and watch the timeless “Who’s on First” sketch; then read the article below to see how it relates to communication failures in the real world.



Note: If you have issues hearing the audio over your site’s network, open the video over your personal internet connection.

Are You Touching All the Bases in Your Communication Game Plans?

— By Karen Swim, [Words for Hire](#)

In this classic comedy skit by comedy duo Abbott and Costello we witness the hilarity that can ensue from communication errors. Real life communication errors can also be funny and may even serve as a bonding moment between the parties involved. But communication errors can also cost us time, money and relationships.

Abbott assumes that he has established that the players have funny names. From this assumption he communicates that “Who” is on first base. Costello, however, did not understand the assumption and does not understand that “Who” is a funny name. Versions of “Who’s on First” are playing out across corporations today.

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Communication Game Plans

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Leaders assume that they have “communicated” to their teams yet team members miss the objectives because they did not know they were given. Consumers are frustrated by instructions that fail to instruct on the basics and support lines buzz with complaints.

No one hits a home run on communications 100% of the time but you can reduce your failure rate and minimize errors when they occur with just a few simple steps.

- **Assume nothing.** Assumptions can get you into trouble when attempting to communicate. Whenever possible, check the understanding of your audience. In a live interaction, ask. If sending an email, simplify as much as possible and include explanation for items that may not be mutually understood. If you are preparing for a meeting, keynote or presentation, verify the depth of understanding in advance.
- **Invite questions.** Ask if there are questions but do so in a way that truly makes it comfortable for people to admit a lack of understanding. There is nothing worse than making someone feel bad for not “getting it.”
- **Listen.** Costello asked the question but Abbott was not really listening. It’s easy to become impatient when we are misunderstood but this heightens the error.
- **Be patient.** I once had a frustrating days long email exchange with a web designer about the color blue. I was working with a client and the web team was based in another country. I got up in the middle of the night to communicate real time and desperately tried to find a way to communicate I wanted blue. An example and a little more explanation finally bridged our communication gap. Ideally, I would have hashed it out by phone but that is not always possible. When I let go of the frustration, and focused on finding ways to be understood we quickly moved to resolution.
- **Check Understanding.** Confirm that the other party understood with simple check statements such as: To make sure we’re on the same page, let’s confirm what was discussed, Does that make sense to you?, I want to make sure I got everything, may I confirm what we talked about? You can do this in live conversation or via a quick confirmation email following a meeting.

UPCOMING EVENTS

 **IPMD Webinar: Improving Program/Project Management**
<https://www.ndia.org/events/2021/7/26/1821---ipmd-webinar#>
 7/26/2021 12:30 - 4:30 pm EDT

 **AACE International**
<https://web.aacei.org/resources/online-learning/seminars>
 As part of the professional development program, AACE International offers a variety of seminar options that will be delivered virtually in 2021.

CCP Certification Review Workshop
 July 12, 14, 19, 21, 2021 -- 1:00 PM - 5:00 PM Eastern (US)

Project Controls from the Owner's Perspective
 August 24, 25, and 26, 2021 -- 11:00 AM - 3:30 PM Eastern (US)

Advanced Project Controls from the Owner's Perspective
 August 30, 31, and September 1, 2021 -- 11:00 AM - 3:30 PM Eastern (US)

 **Nuclear Deterrence Summit**
<https://na.eventscloud.com/ereg/index.php?eventid=525816&>
 August 3 – 5, 2021

 **Decommissioning Strategy Forum**
<https://na.eventscloud.com/ereg/newreg.php?eventid=566519&>
 September 20 – 21, 2021

 **Rad Waste Summit**
<https://na.eventscloud.com/ereg/index.php?eventid=566517&>
 September 22 – 24, 2021

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

1 — Mormon leader Brigham Young (1801), and actors Andy Griffith and Marilyn Monroe (1926) were born, the *Superman* comic was first published (1938), actor Morgan Freeman (1937) and singer Alanis Morissette (1974) were born, and **CNN made its debut** (1980).



2 — The Civil War officially ended (1865), PT Barnum's circus made its U.S. debut (1835), Grover Cleveland became the first U.S. president to marry while in office (1886), and actor/comedian Dana Carvey was born (1955).

3 — Confederate President Jefferson Davis was born (1808), Ed White became the first American to walk in space (1965), and TV newsman Anderson Cooper was born (1967).

4 — The first recorded solar eclipse occurred (780 BC), World War II's Battle of Midway began (1942), actress Angelina Jolie was born (1975), and the Tiananmen Square Massacre took place in China (1989).

5 — Sax player Kenny G was born (1956), the Six Day War between Israel and an Arab coalition began (1967), Sen. Robert F. Kennedy was assassinated (1968), and President Ronald Reagan died (2004).

6 — President Andrew Jackson became the first president to ride a train (1833), the first drive-in theater opened (1933), spiritual leader The Dalai Lama was born (1935), and World War II's D-Day began as the Allies invaded the north coast of France (1944).

7 — Actor Liam Neeson (1952) and musician Prince (1958) were born, and Texas became the first state to make Juneteenth an official holiday (1979).

8 — First Lady Barbara Bush (1925), actor Jerry Stiller (1929) and comedian Joan Rivers (1937) were born, and **the NFL and AFL announced their merger** (1966).



9 — Donald Duck debuted (1934), and sportscaster Dick Vitale (1940), and actors Michael J. Fox (1961), Johnny Depp (1963) and Natalie Portman (1981) were born.

10 — Benjamin Franklin discovered electricity (1752), singer/actress Judy Garland was born (1922), Alcoholics Anonymous was founded (1935), the ballpoint pen was patented (1943), and Olympic figure skating champ Tara Lipinski was born (1982).

11 — Undersea explorer Jacques Cousteau (1910), legendary football coach Vince Lombardi (1943), actor Gene Wilder (1935) and Hall of Fame quarterback Joe Montana (1956) were born, actor John Wayne died (1979), and the movie *E.T. The Extra-Terrestrial* was released (1982).

12 — The first perfect game in baseball was pitched (1880), the Philippines declared its independence from Spain (1898), and President George H.W. Bush (1924), Holocaust survivor and author Anne Frank (1929), and sportscaster Marv Albert (1943) were born.

13 — Comedian Tim Allen was born (1953), the Miranda rights were established (1966) Thurgood Marshall was appointed to the Supreme Court (1967), and twin actresses Mary-Kate and Ashley Olsen were born (1986).



14 — The U.S. Army was organized (1775), Congress adopted the Stars and Stripes as America's flag (1777); sandpaper was patented (1834), **Walt Disney's Bambi was released** (1942), and President Donald Trump (1946) and singer Boy George (19161) were born.

15 — The border between the U.S. and Canada was established (1846), and country singer Waylon Jennings (1937), actor Jim Belushi (1954), baseball Hall of Famer Wade Boggs (1958), actresses Helen Hunt (1963) and Courtney Cox (1964), and rapper Ice Cube (1969) were born.

16 — **The first roller coaster in America opened** (1884), the Ford Motor Company was incorporated (1903), boxing champ Roberto "No mas" Duran was born (1951), and cosmonaut Valentina Tereshkova became the first woman in space (1963).



17 — The Statue of Liberty arrived in New York City from France (1885), and entertainer Dean Martin (1917), singer Barry Manilow (1946), actress Phylicia Rashad (1948), and tennis star Venus Williams (1980) were born.

18 — The War of 1812 began (1812), Napoleon was defeated at Waterloo (1815), musician Paul McCartney was born (1942), and Sally Ride became the first American woman in space (1983).

19 — The first Juneteenth celebration was observed in Texas (1866), baseball Hall of Famer Lou Gehrig (1903) and dancer/singer Paula Abdul (1963) were born, and the Civil Rights Act was passed by Congress (1964).

20 — West Virginia became a state (1863), the first jet plane was tested (1939), singers Brian Wilson (1942), Anne Murray (1945) and Lionel Richie (1950), actor John Goodman (1952), singer Cyndi Lauper (1953), and actress Nicole Kidman (1967) were born, and the movie *Jaws* premiered (1975).

21 — The U.S. Constitution was ratified (1788), and actress Meredith Baxter and actor Michael Gross were born (1947).

22 — Donuts were invented (1847), and singer Kris Kristofferson (1936), and actress Meryl Streep (1949) were born.

23 — The Secret Service was created (1860), Supreme Court Justice Clarence Thomas was born (1948), and the anti-discrimination Title IX education act went into effect (1972).

24 — **Boxing champ Jack Dempsey** (1895) and musician Mick Fleetwood (1942) were born, and the Soviet Union began a blockade of West Germany (1948).



25 — Gen. George Custer and the 7th U.S. Cavalry were wiped out in the Battle of Little Big Horn (1876), singer Carly Simon was born (1945), the Korean War began (1950), and pop star Michael Jackson died (2009).

26 — Baseball inventor Abner Doubleday was born (1819), the first U.S. troops arrived in France in World War I (1917), the United Nations was chartered (1945), the Berlin Airlift began (1948), and singer George Michael was born (1963).

27 — The Smithsonian Institution was established (1829), Mormon church founder Joseph Smith was killed (1844), the "Happy Birthday" song was first sung (1859), deaf/mute/blind author/lecturer Helen Keller (1880) and Bob "Captain Kangaroo" Keeshan (1927) were born, and President Truman ordered U.S. troops to Korea (1950).

28 — The Treaty of Versailles was signed, officially ending World War I (1919), Hall of Fame quarterback John Elway was born (1960), the first U.S. offensive of the Vietnam War began (1965), and actor John Cusack was born (1966).

29 — Actor Gary Busey was born (1944), and the Supreme Court ruled the death penalty as unconstitutional (1972).

30 — Daredevil Charles Blondin became the first person to cross Niagra Falls on a tightrope (1859), **the novel *Gone With the Wind* was published** (1936), and boxing champ Mike Tyson was born (1966).



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Promoting Project Management Excellence

JUNE 2021

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Director's Corner1
Major Systems Project (MSP)

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