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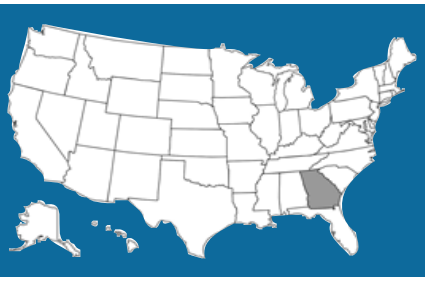

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Like the poet from Minnesota said, the times they really are a changin'. So, come senators, come congressmen, please heed the call, and let's learn about some of these changes with two well-written articles in this, our latest, and greatest, *At Issue*.

A few coming changes will domino into other changes. For instance, we will take a new census soon, and thus we will begin the process of redrawing our political maps. So pay attention to the first article in this *At Issue*, in which we will delve into the weeds of what the process of reapportionment and redistricting will look like, especially in the wake of recent Supreme Court decisions.

Other coming changes may seem a little far-fetched, even as they are unfolding in our backyard. Consider, for example, that the new, state-of-the-art F-35 fighter jet, which is partially constructed in Marietta, will be a boon to our state economy while advancing real-world warcraft into something that approaches science fiction. Some of you may remember the Craig Thomas novel "Firefox", or maybe its movie adaptation that was directed by Clint Eastwood, about what we might today call a Smart Plane, which could read a fighter pilot's mind while dog-fighting Soviet MIGs. The F-35 isn't too far removed from that, hard as it is to believe. Bringing $560 million to Georgia each year, the F-35's presence in our state is substantially growing the economy while giving our fighting men and women an upper hand.

As always, I hope you find the information in this *At Issue* useful and informative. Don't be a stranger, don't hesitate to reach out with ideas for future articles, and please let me or the folks in my office know how we can be of any assistance.

Until next time…

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Redistricting and Reapportionment

Piecing Together the Puzzle – What Rucho v. Common Cause Means for the Redistricting Process

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As we approach the decennial U.S. Census in 2020, the Legislature is also beginning its plans for the next round of redistricting and reapportionment. For those who may not have been around during the last round of redistricting, the Georgia General Assembly is responsible for redistricting the state's 180 House and 56 Senate districts, reapportioning our fourteen U.S. House Congressional districts and approving county, city and local Board of Education plans. Redistricting plans, like other legislation, are passed by the Legislature. As with all legislative enactments, redistricting plans are subject to the veto authority of the Governor. The upcoming census and recent decisions by the United States Supreme Court affect how we will complete the redistricting process in 2021.

Locating the Puzzle Pieces

The most important piece is also the first piece completed – the census. The census not only counts the nation's population, it also determines the apportionment of seats in Congress and the distribution of some federal program benefits.[1] Every ten years the House of Representatives' 435 seats are reapportioned in accordance with the latest federal census.

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(Piecing Together the Puzzle – What Rucho v. Common Cause Means for the Redistricting Process - continued from page 1)

The Metro Atlanta area has experienced drastic growth over the past ten years, and those who have noticed an uptick in Atlanta traffic would likely agree. While the population of some states grow, the population of other states decrease or grow more slowly. As a result, congressional seats move from those slow-growing states to states where the population has grown more quickly. Then, within those states, the boundaries of congressional districts must be redrawn to make the population of each district equal. In the simplest terms, reapportionment is the allocation of seats in the U.S. House of Representatives to the states, whereas redistricting involves the creation of new districts, within a state, to fill those seats in order to reflect the population shifts of the past decade.[2]

Contrary to public opinion, reapportionment is not a partisan political process. In the most basic sense it is a mathematical one. Every ten years the reapportionment of the U.S. House of Representatives is carried out in accordance with a predetermined formula, a statutory formula, called the "method of equal proportions", which was established in 1941 following the census of 1940.[3] The method of equal proportions assigns seats in the House of Representatives according to a "priority" value. The priority value is determined by multiplying the population of a state by a "multiplier."[4] While this may make perfect sense to the mathematicians of the world, the Census Bureau has broken it down more simply for the rest of us. For example, following the 2000 Census, each of the 50 states was given one seat out of the current total of 435. The next, or 51st seat, then went to the state with the highest "priority value" and thus became that state's second seat. According to the Census Bureau, the priority value is "calculated by dividing the population of each state by the geometric mean of its current and next seats."[5] This continues until all 435 seats are assigned to a state.[6] It is not subject to partisan manipulation, except in determining who gets counted in the census. The decision of Congress to use this particular formula, rather than another, has been upheld by the Supreme Court.[7]

Redistricting, on the other hand, can be highly partisan. This is because, in redrawing district boundaries, the drafter has such wide discretion in deciding where the boundaries will run. Redistricting is a puzzle, but this puzzle does not have only one set shape. Each puzzle piece can fit in a myriad of places, and drawing new maps after a census is a difficult process that includes a host of factors regardless of which political party is drawing the maps.[8]

Guidelines on Piecing the Puzzle Together

After the census and reapportionment, comes the most difficult piece of the puzzle – drawing the maps. The process for redistricting is governed by state and federal law. When redistricting, state legislatures or redistricting commissions have certain criteria that they must adhere to when drawing the lines. The intent of this criteria is to break down the puzzle that is redistricting and make districts easier to identify while ensuring that the process is consistent and fair to the citizens.

Regardless of state laws or constitutional provisions, all states must comply with the federal constitutional requirements related to population and anti-discrimination. For congressional redistricting, the Apportionment Clause of Article I, Section 2, of the U.S. Constitution requires that all districts be as nearly equal in population as practicable.[9] For state legislative districts, courts have defined the Equal Protection Clause of the 14th Amendment to the U.S. Constitution to require that states construct legislative districts that are substantially equal in population.[10]

In addition to population equality, Section 2 of the Voting Rights Act of 1965 prohibits redistricting maps and plans that discriminate on the basis of race. Courts review claims of racial discrimination in the districting process with the highest scrutiny, and this includes intentional or inadvertent discrimination.[11] States can also adopt their own redistricting principles while still adhering to the mandatory standards set out by the U.S Constitution and the Voting Rights Act.

The Georgia Constitution requires districts to be contiguous, meaning that all parts of a district must be connected at some point with the rest of the district.[12] This traditional districting principle is merely one of the many standards that has been adopted in Georgia. In 2011, the Senate Committee on Redistricting and Reapportionment adopted additional guiding principles to be used when drafting district plans. The guidelines included provisions that each congressional district was to be drawn with a total population of plus or minus one person from the ideal district size; that each legislative district should be drawn to achieve a total population that was substantially equal as practicable; and that no multi-member districts should be drawn. The Redistricting Committee also decided to abide by other traditional principles, such as, considering the boundaries of counties and precincts, compactness, and communities of interest when drawing maps.[13]

Political Puzzle Pieces

A recent decision by the Supreme Court has altered the factors states must consider when redistricting. This past July, the Supreme Court decided it would refuse to involve itself in the political thicket of the redistricting process. In the simplest terms, the Supreme Court's decision in Rucho v. Common Cause held that partisan "gerrymandering" claims will no longer be decided by the federal courts because they present "political questions," and, as a result, claims of "excessive partisanship" in redistricting are not justiciable.[14] Further, the Supreme Court held 5 to 4 that the Constitution does not outright require proportional party representation.

The Court's ruling came in two cases, one from North Carolina and another from Maryland. Voters and other plaintiffs in North Carolina and Maryland filed suits challenging their respective state's maps and claiming the congressional districting maps were unconstitutional partisan gerrymanders. The North Carolina plaintiffs claimed that their state's districting plan discriminated against Democrats, while the Maryland plaintiffs claimed that their state's plan discriminated against Republicans.

While gerrymandering can be traced back to the time of the Framers, claims of partisan gerrymandering have proven especially difficult for the Supreme Court to adjudicate. However, it is important to note that federal courts will continue to have a role in two fundamental areas of a state's drawing of congressional districts: 1) one-person, one-vote and 2) racial gerrymandering.[15] It is illegal for a jurisdiction to violate the one-person, one-vote rule or to engage in racial discrimination, but when it comes to political gerrymandering, the Supreme Court has recognized that "[p]olitics and political considerations are inseparable from districting and apportionment."[16]

The Court has previously struck down districting plans due to racial discrimination, population inequality and vote dilution, but has never struck down a districting plan as an unconstitutional partisan gerrymander. And Chief Justice Roberts's majority opinion further confirms the fact that the Supreme Court struggles to pinpoint what standards should be in place for deciding claims of excessive partisanship.[17] The Supreme Court has acknowledged that they would have to be armed with a reliable standard that would differentiate unconstitutional from constitutional political gerrymandering.[18] Ultimately, the Court, led by Chief Justice Roberts, was not prepared to decide "how much partisan dominance is too much"[19] but was careful to add that their conclusion did not condone excessive partisan gerrymandering, nor indicate it is right, fair or even democratic. Nevertheless, they do not believe the solution lies with the federal judiciary. The Supreme Court ruling in Rucho v. Common Cause now places the undertaking of policing redistricting efforts, as it relates to partisan gerrymandering claims, solely at the feet of the legislative branch in individual states and their courts.[20]

The Work Begins Now

States can continue to adhere to traditional districting criteria, including maintenance of political subdivisions, keeping communities of interest together, and protecting incumbents, or the legislature can set new standards. These standards will be incorporated by the drafters of the new district maps. In the Legislative and Congressional Reapportionment Office, Georgia's dedicated office for redistricting and reapportionment services, the preparation for the upcoming Census begins not long after the work from the previous Census concludes. The Office is responsible for a great deal of detail-oriented work analyzing the geography in each of Georgia's 159 counties, work that is necessary to create the best and most accurate resource for Georgia. The 2020 Census data will be released to the states no later than April 1, 2021. Once it is received, the Legislative and Congressional Reapportionment Office will continue its work to prepare updated reports and maps showing the growth and change throughout Georgia over the past ten years.

As we prepare for 2021, each state legislature will be able to provide guidance, in statutes and state constitutions, for their state courts to apply when disagreements arise over redistricting maps. States will be able to decide whether partisan gerrymandering is allowed and to what degree, and it will be interesting to see how individual states adjust to this new "power." – *MM*

Defense and Economic Development

The F-35 Joint Strike Fighter – Bringing Guns and Butter to Georgia

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At the dawn of the Twentieth Century, Great Britain launched the *HMS Dreadnought*, a new type of "all big gun" battleship so powerful and advanced that she rendered all navies throughout the world virtually obsolete overnight. What made the *Dreadnought* a quantum leap in ship design was her large battery of powerful main guns, all of which were of the same large caliber and aimed by advanced fire-control "computers." Additionally, she was the first large warship in the world powered by turbine engines instead of old reciprocating engines, which made her much faster than any of her rivals. She could outfight and outrun any other ship in the world at the time. So revolutionary was this ship that battleships constructed afterwards are collectively referred to as "dreadnoughts," regardless of their country of origin, while all battleships constructed before the *Dreadnought* came to be known as "predreadnoughts."

Fast forward a hundred years, and the United States is producing a jet fighter so advanced, lethal, and influential that it could potentially render all other air forces obsolete once it is fully operational. Officially known as the F-35 Lightning II Joint Strike Fighter, the Lockheed Martin-built F-35 is a fifth generation multirole stealth fighter operated by the United States Air Force, Navy, and Marines.[1] The plane is planned to complement and eventually replace existing combat aircraft used by the U.S. military, such as the F-15, F/A-18, AV-8B, and A-10. Eleven other nations currently operate or will operate the advanced fighter as well, while several other nations are evaluating the fighter for future purchases. The aircraft comes in three main variants: the F-35A designed to be operated by a nation's air force from traditional airbases; the F-35B, which can land and takeoff vertically and is designed to operate from small landing fields and off of small aircraft carriers; and the F-35C which is designed to operate off of the U.S. Navy's large nuclear aircraft carriers in the same manner as the Navy's current catapult-assisted aircraft. The United States is the only nation operating all three variants, and the U.S. Navy is the only operator of the F-35C.

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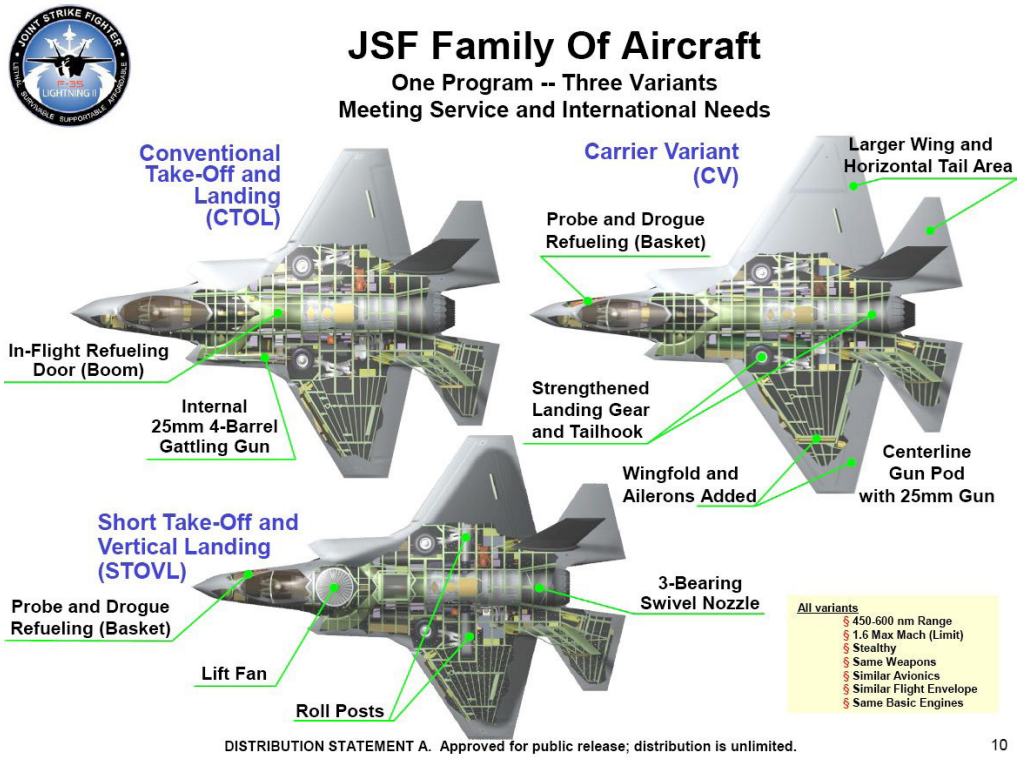

Source: Department of Defense

F-35 Design and Capabilities

The F-35's most notable feature is its stealthy design. Its stealth allows it to operate in contested airspace without being detected by radar and sensors that older fighters cannot evade. Despite popular belief, stealth isn't about making a plane totally invisible to radar, it's more about delaying detection, rather than circumventing it. This is accomplished by reducing the aircraft's radar cross section, a measurement of how detectable an object is to radar. Although classified, it is estimated that the F-35's radar cross section is similar to a small bird. To maximize its stealth, the aircraft carries its missiles and bombs in internal bays, although it can carry additional weapons externally when stealth isn't a priority. Because of its extreme stealthiness, the F-35 routinely flies with radar reflectors attached to its frame while training so that it can safely remain visible on radar to other aircraft and air traffic controllers.

An F-35A shows off its internal weapons bays.

Credit: U.S. Air Force

Its stealth isn't the only quality that defines the aircraft, however. Fifth Generation fighter aircraft characteristics not only involve stealth, but their designs also incorporate advanced avionics and sensors. The F-35 is equipped with the most powerful and comprehensive integrated sensor package of any fighter aircraft in history. In fact, it can be argued that the aircraft's most important quality is its ability to act as a mobile sensor package that can multiply the effectiveness of friendly aircraft, ground forces, and ships by sharing that information through a data link with other friendly units not equipped with such advanced sensors. The plane can essentially serve as a force-multiplier by allowing friendly and networked Cold War-era planes to see the same information that the F-35 sees, thus increasing the situational awareness of every friendly unit involved in the same mission.

The plane's sensors also work hand-in-hand with the pilot's helmet-mounted display. The new helmet not only replaces the traditional heads-up display projected on the plane's canopy showing critical information and data, but also provides infrared imagery at all angles so the pilot can virtually "see through" the aircraft.

As noted earlier, the F-35 is a multirole fighter, able to execute a variety of missions which include air-to-air combat; air-to-ground strikes; electronic warfare; and intelligence, surveillance and reconnaissance. Unlike many other modern jet fighters, one thing the F-35 is not optimally designed to do is to be a dedicated dog fighter. That is to say, the F-35 could find itself at a disadvantage if pressed to engage an enemy within visual range. The aircraft is designed to use its stealth, sensors, and long range missiles to engage the enemy beyond visual range. But if pressed, it can fight close in with its heat-seeking missiles which can be aimed through the pilot's visor just by looking at a target.

All this advanced technology does entail some major drawbacks, however. For one, the F-35 program is several years behind schedule, but that's not unusual for major military programs. The program is also well-over its initial projected budget, but again, this isn't unusual for a program of this magnitude. The aircraft is projected to have a lifespan beyond the 2070s so it's still in its infancy.

Capt. Anneliese Satz, the Marine Corps' first female F-35 pilot, displays the F-35's advanced helmet prior to a training flight at Marine Corps Air Station Beaufort.

Credit: U.S. Marine Corps

Another area of concern is not with the F-35 itself, but with the way it is being rolled out. Lockheed Martin and the Pentagon have applied the concept of "concurrency" to the program. Concurrency is essentially the overlap in the development and production phases of a procurement program. For the F-35, this involves purchasing dozens of early production examples while simultaneously flight-testing and implementing any necessary upgrades across the fleet as time goes on. Because of concurrency, several flaws requiring retrofits in early production aircraft are being discovered after the planes have been delivered to the military. Critics have jumped on this, contending that the plane is plagued with design flaws and that Lockheed Martin was allowed to simultaneously design, test, and produce the F-35 instead of identifying and fixing defects before delivery.[2] Lockheed Martin contends that as testing continues, the risk of new discoveries and retrofits will decline.

Despite its ongoing flight testing by the various military services, the F-35 made its American combat debut on September 27, 2018, when U.S. Marine Corps F-35Bs from the amphibious assault ship *USS Essex* in the Arabian Sea carried out an air strike against the Taliban in Afghanistan. Israel also claims that its F-35s have been operating over the Middle East since May 2018.

F-35's Economic Impact

The economic impact of Lockheed Martin and the F-35 on Georgia and on the United States cannot be overstated. Although final assembly occurs at Lockheed's massive plant in Fort Worth, Texas, the company's 3.4 million square-foot manufacturing facility in Marietta constructs the plane's center wing and fuselage assembly.

Aerospace products are Georgia's top export, totaling over $9 billion, and is the state's second largest manufacturing industry, generating a $57.5 billion economic impact. Georgia ranks 8th in Department of Defense spending, with over $7.1 billion in defense-related contracts in Fiscal Year 2017. Lockheed Martin is the largest defense contractor in the nation, with a nationwide economic impact of over $30 billion in FY 2017. The company's annual economic impact in Georgia is $2.8 billion. Defense spending in Cobb County alone amounts to $2.7 billion, most of which is through Lockheed Martin contracts.[3]

According to Lockheed, the F-35 is responsible for more than 220,000 direct and indirect U.S. jobs while contributing more than $44 billion to the nation's economy. The program teams with nearly 1,400 domestic suppliers in 45 states and Puerto Rico to produce thousands of components. Twenty-five Georgia businesses are subcontracted to provide manufacturing support for the F-35 while 5,470 Georgians are directly and indirectly engaged in the construction of the planes. Overall, the F-35's economic impact in Georgia is nearly $560 million annually. In addition to the Fort Worth plant where the construction of the planes is finalized, there are two final assembly facilities outside the United States: one in Cameri, Italy, and another in Nagoya, Japan. Parts for the F-35 are also manufactured in nine other countries, making the program a truly international endeavor.

The F-35 is not only the largest current procurement program in the Pentagon, it's the largest in history and is expected to total over a trillion dollars over its entire lifetime, which is expected to extend beyond 2070. For Fiscal Year 2019, Congress authorized $7.6 billion to procure 77 F-35s. For FY 2020, Congress is projected to authorize $10 billion to procure another 94 aircraft.[4] The Pentagon currently plans to acquire more than 2,400 F-35s, while U.S. allies are expected to purchase hundreds of additional airframes.

As the F-35 program matures and more planes are delivered, it will continue to benefit Georgia in ways other than by being manufactured here, as it is predicted to operate out of Moody Air Force Base in Lowndes County and possibly out of Warner Robins Air Force Base in Houston County. This is significant to Georgia because its eight military installations collectively contribute an estimated $18 billion to the state's economy each year.

Conclusion

Like the *HMS Dreadnought* a century before it, the F-35 is the most advanced, revolutionary, and largest military program of its time. Although the F-35 program is over-budget and behind schedule, it is still in its infancy and projected to be operational into the 2080s. Its trillion dollar price tag cannot be ignored, but it will eventually replace several classes of costly cold war-era aircraft. Its fighting abilities and its economic benefit to Georgia and to the United States economy also cannot be overlooked. – *AA*

Endnotes

Piecing Together the Puzzle – What Rucho v. Common Cause Means for the Redistricting Process

1 The Census Bureau, "*How the Census Benefits Your Community*", https://www.census.gov/programs-surveys/decennial-census/about/why.html.
2 Charles S. Bullock III, *Redistricting: The Most Political Activity in America,* (Maryland: Rowman & Littlefdield Publishers, Inc, 2010), 4.
3 2 U.S.C. Sections 2a and 2b.
4 The Census Bureau, https://www.census.gov/population/apportionment/about/computing.html.
5 *Id.*
6 *Id.*
7 *Dept. of Commerce v. Montana*, 503 U.S. 442 (1992).
8 Charles S. Bullock III, *Redistricting: The Most Political Activity in America,* (Maryland: Rowman & Littlefdield Publishers, Inc, 2010), 8-13.
9 *Wesberry v. Sanders*, 376 U.S. 1, 15 (1964). (In this decision **Parrott v. Lamone, Dist. Court, D. Maryland 2016** the Court established the constitutional requirement that representatives be chosen "by the People of the several States," U.S. Const. art. I, § 2, "means that as nearly as is practicable one man's vote in a congressional election is to be worth as much as another's." (quoted in *Parrott v. Lamone*, (D.Md., 2016).
10 *Reynolds v. Sims*, 377 U.S. 533, 577 (1964).
11 *Shaw v. Reno,* 509 U.S. 630 (1993).
12 Ga. Const. Art. III, § 2, Para. II.
13 Georgia Senate, *2011-2012 Guidelines for the Senate Reapportionment and Redistricting Committee* (2011). https://www.dropbox.com/s/i8zqvivtr8iozs8/GeorgiaSenateCommitteeGuidelines2011-12.pdf.
14 *Rucho v. Common Cause*, 139 S.Ct. 2484 (U.S.N.C., 2019).
15 *Id.*
16 *Gaffney v. Cummings*, 412 U.S. 735, 753 (1973).
17 *Rucho v. Common Cause*, 139 S.Ct. 2484, 2491 (U.S.N.C., 2019).
18 *Id.* (quoting *Cromartie*, 526 U.S., at 551).
19 *Rucho v. Common Cause*, 139 S.Ct. 2484, 2498 (U.S.N.C., 2019) (quoting *LULAC*, 548 U.S., at 420).
20 *Id.*

Defense and Economic Development

1 Jet fighters are classified by generation to identify major technology advances in their historical development. In general 1st Generation refers to jet aircraft designed from 1945-1955; 2nd Generation is 1955-1960; 3rd Generation is 1960-1970; 4th Generation is 1970 to 1990; 4.5 Generation is 1990 to 2000; and 5th Generation is 2000 to the present. A 5th Generation aircraft is generally regarded as a fighter incorporating stealth with internal weapons bays, extreme agility, full-sensor fusion, integrated avionics, and the ability to supercruise without using afterburners. Examples of 4th Generation fighters are the now-retired F-14 of *Top Gun* fame, the F-15, F-16, and F/A-18. The F-22 and F-35 are America's 5th Generation fighters. China and Russia also operate their own indigenously-built 5th Generation fighters, but their effectiveness is still unknown.
2 Joseph Trevithick, *USMC's Older F-35Bs May Only Be Able To Fly Around A Quarter Of Their Expected Service Life (Updated)*, The War Zone (Jan. 31, 2019), https://www.thedrive.com/the-war-zone/26269/usmcs-older-f-35bs-may-only-be-able-to-fly-around-a-quarter-of-their-expected-service-life
3 U.S. Department of Defense - Office of Economic Adjustment, *Defense Spending By State Fiscal Year 2017* (Mar. 2019), available at: http://www.oea.gov/sites/default/files/fy2017-r2/FY2017_Defense_Spending_by_State_Report_Web_Version_20190315.pdf
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