TRANSPORTATION TECHNICIAN

# SUPPLY & DEMAND

TechForce Foundation®

THE FIRST UPTICK ACROSS THE INDUSTRY IN POSTSECONDARY COMPLETIONS IN 10 YEARS

2023

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# OVERVIEW

Significant shortages in technician employment have existed within the transportation industry for a number of years. Recently, we have seen that the lack of young men and women training for the skilled trades is not an issue specific to the transportation industry. Far from it. It is a problem impacting all skilled trades in a very concerning way. Whether you are considering plumbers, electricians, HVAC techs, welders or carpenters, the lack of skilled workers is the same. However, there is evidence that we are experiencing the beginning of a new trend. Perhaps the message is finally being heard across our nation that there are plenty of lucrative jobs available across these industries that are not just jobs, but careers in the making.

In this year's **Transportation Technician Supply & Demand Report**, there is reason for encouragement. For the first time in 10 years, the number of postsecondary graduates in the automotive, collision, diesel and aviation sectors have all increased! And beyond that, the number of employees in three out of four of these sectors have increased year-over year. These are very encouraging signs, and show that our ongoing efforts to promote interest in these careers is beginning to show measurable results.

Some statistics for the aviation industry were introduced in last year's report for the first time. We have now expanded the aviation data further, and included it as an additional core industry segment in the Supply and Demand Report.

In our 2021 report we began including projections for the impact of Electric Vehicles (EV) on the total demand for technicians. There is an impact, as EV vehicles do require less maintenance than internal combustion engine (ICE) powered vehicles. Those projections continue with this year's report, but are now integrated into the demand numbers for new entry-level technicians that are shown.

# TECHNICIAN DEMAND

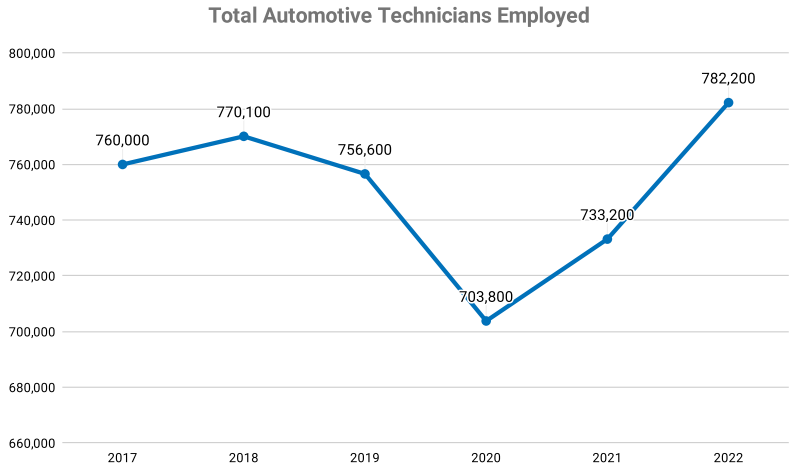
This report addresses projected annual **demand** for **new entrant technicians** in the automotive, collision, diesel and aviation fields. By definition, new entrant technicians are those entering the occupation for the first time, as opposed to experienced technicians who may be switching employers but don't increase the number of technicians available in the occupation. These new entrant techs come not only from postsecondary training programs, but also from high school shop programs and "off-the-street", with no training at all.

It is important to understand the projections below are for new entrant demand, not actual hiring. To the extent that employers are not able to hire all the technicians they seek, the numbers below will exceed the total increase in technicians actually reported by the Bureau of Labor Statistics (BLS).


[1] This report is a combined update supplement to TechForce Foundation's Technician Demand report (Oct. 2017), and the Technician Supply report (June 2018). For detailed information on methodology and background, please see those reports.

# 1 Automotive Technician Employment

In 2021, the total number of automotive technicians employed increased for the first time since 2018. That trend continued into 2022, with another very significant increase of nearly 50,000 technicians. In the two-year period from 2020 to 2022, that shows a growth in the automotive segment of over 78,000 technicians, corresponding to an 11.1% increase.



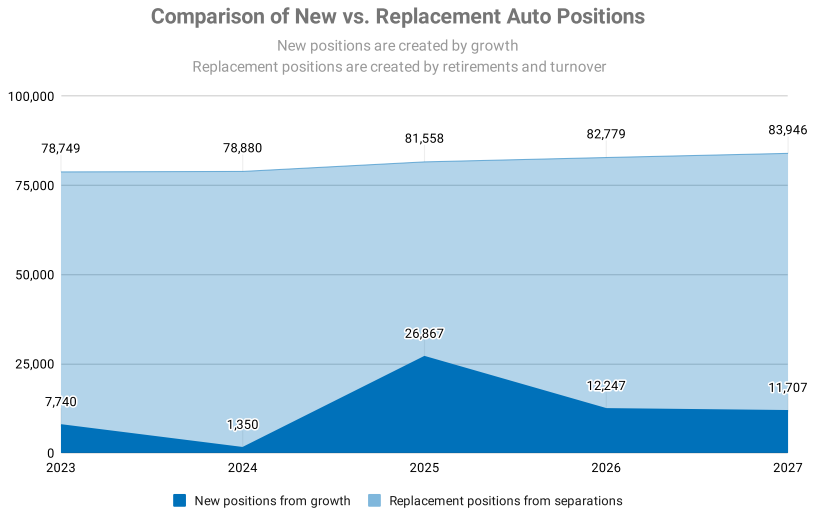

# 2 Demand for Automotive New Entrant Technicians

Demand for new entrant technicians comes from two sources; new growth in that sector, and occupational separations. Occupational separations include both retirements and turnover from those leaving the industry for other reasons. As in past years, the demand from occupational separations far outpaces the demand from new growth. For example, between 2023 and 2027, 406,000 positions will be needed due to operational separations, while only 60,000 will come from new growth.

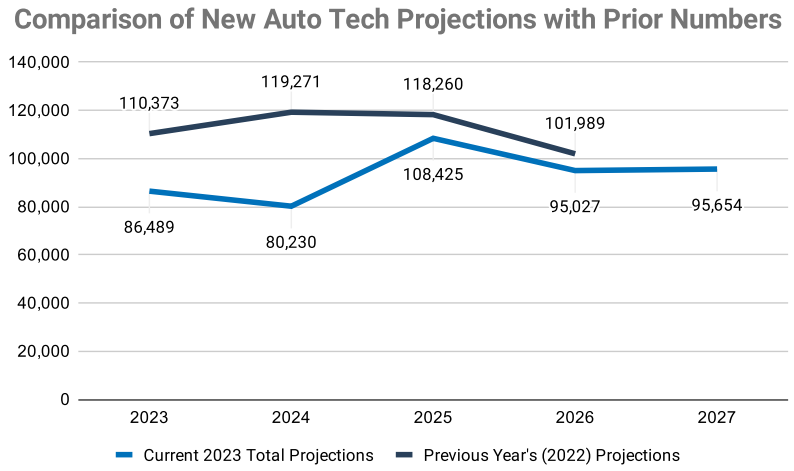
| Projections for New Entrant Demand (a) | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| New positions from growth | 7,740 | 1,350 | 26,867 | 12,247 | 11,707 |
| Replacement positions from separations | 78,749 | 78,880 | 81,558 | 82,779 | 83,946 |
| Unfilled positions from 2022 - carried over to 2023 (b) | 13,626 | | | | |
| **Total New Entrant Demand** | **86,489** | **80,230** | **108,425** | **95,027** | **95,654** |

[a] Projections assume 2.0% growth in 2023, 1.7% in 2024, 1.6% in 2025, 1.6% in 2026, and 1.4% in 2027. Estimates based on a compilation of Congressional Budget Office (CBO), The World Bank, Federal Reserve Board, Survey of Professional Forecasters (SPF), and this author's projections.
[b] Unfilled positions from previous year are calculated at a 50% factor with the assumption that employer has made some adjustments to compensate for shortage in techs (e.g. change in hours, change in shifts, stall utilization, etc.).

The following chart illustrates the disparity between new entrant demand from growth vs. demand from replacement positions. The BLS Replacement Rate that quantifies occupational separations was 9.8% for 2021 and remained at that level for 2022.

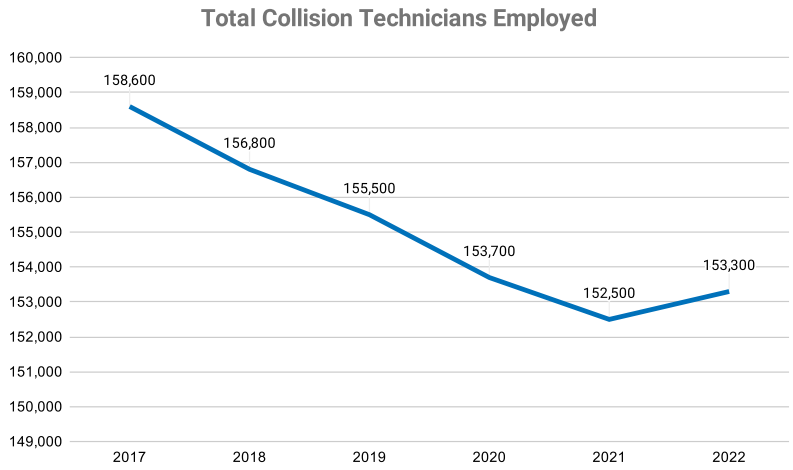



This next chart compares the current automotive technician new entrant demand with our previous report released in 2022.



## 3 Collision Technician Employment

The chart below represents total industry employment of collision technicians over the past 6 years. After a downward slide that lasted for the past six years, that trend has now reversed for 2022, with an increase of 800 technicians; a little over 0.5%. While this is not a significant increase, it is certainly encouraging.



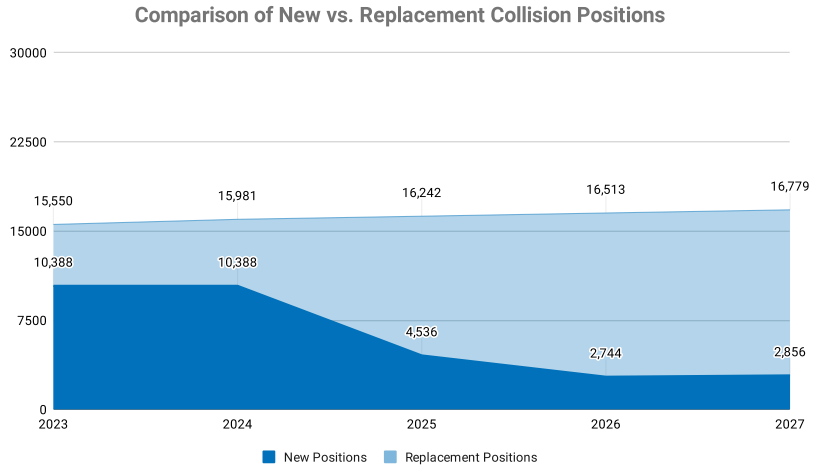

## 4 Demand for Collision New Entrant Technicians

Similar to the situation with automotive technicians, the majority of new entrant demand will be created by occupational separations. Additionally, nearly 5,500 unfilled positions from 2022 add to the 2023 demand projections, as seen in the below chart.

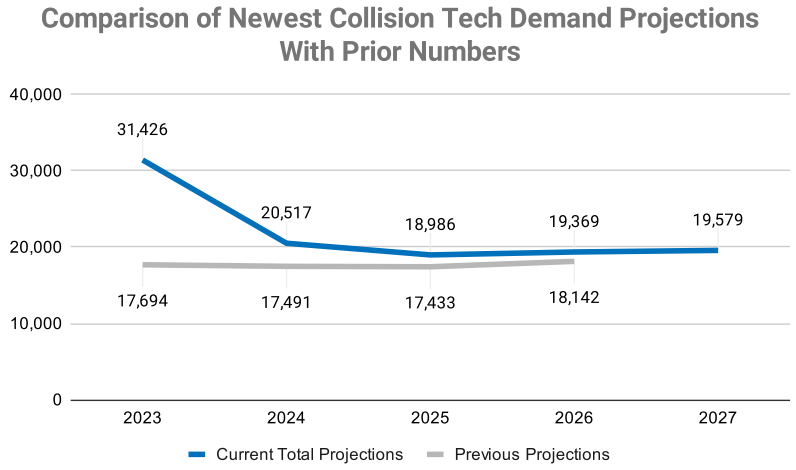
| Projections (a) | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| New positions | 10,388 | 10,388 | 4,536 | 2,744 | 2,856 |
| Replacement positions | 15,550 | 15,550 | 15,981 | 16,242 | 16,513 |
| Unfilled positions from 2022 - carried over to 2023 (b) | 5,488 | | | | |
| **Total New Entrant Demand** | **31,426** | **20,517** | **18,986** | **19,369** | **19,579** |

[a] Projections assume 2.0% growth in 2023, 1.7% in 2024, 1.6% in 2025, 1.6% in 2026, and 1.4% in 2027. Estimates based on a compilation of Congressional Budget Office (CBO), The World Bank, Federal Reserve Board, Survey of Professional Forecasters (SPF), and this author's projections.
[b] Unfilled positions from previous year are calculated at a 50% factor with the assumption that employer has made some adjustments to compensate for shortage in techs (e.g. change in hours, change in shifts, stall utilization, etc.).

This next chart illustrates the disproportion between new entrant demand from growth vs. demand from replacement positions in the collision sector. The BLS Replacement Rate for collision technicians remains the same as in 2021, at 9.5%.

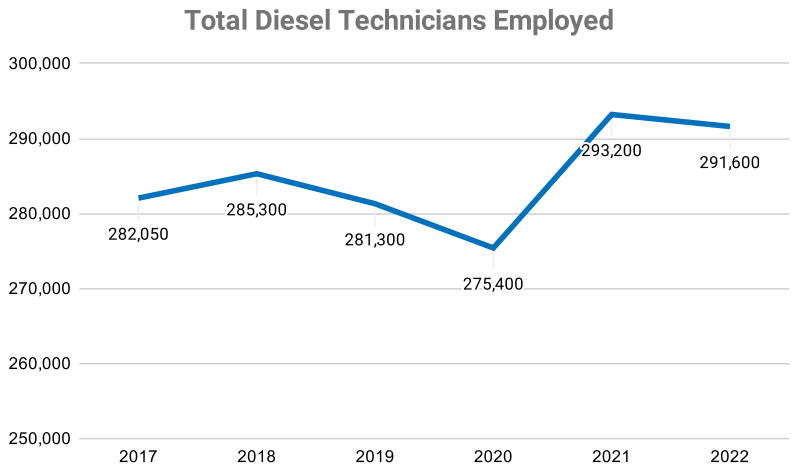



The following chart compares the current collision technician new entrant demand with our previous report released in 2022.



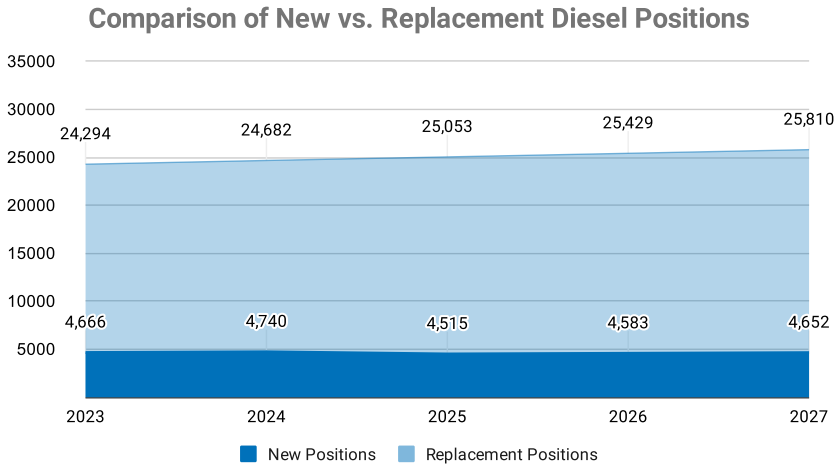
# 5 Diesel Technician Employment

The chart below represents total industry employment of diesel technicians over the past 6 years. Employment in the diesel sector hit its peak in 2018 before dropping for the following 2 years. Numbers for 2021 showed a rebound, but for 2022, employment dipped slightly once again.

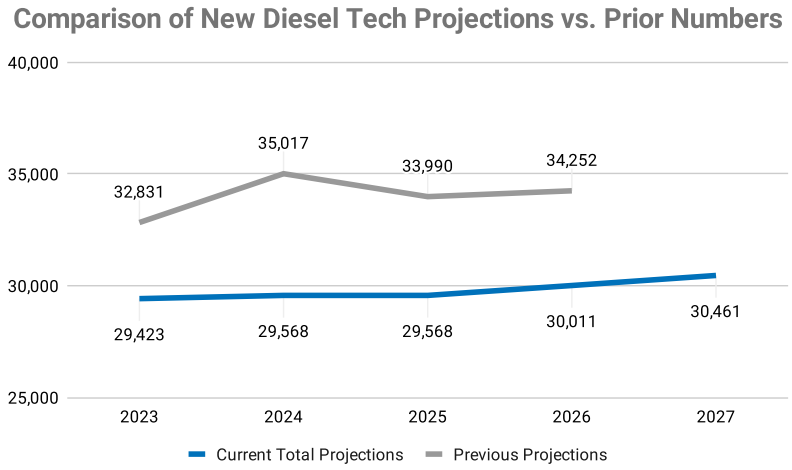



# 6 Demand for Diesel New Entrant Technicians

This next chart illustrates the imbalance between new entrant demand from growth vs. new entrant demand from replacement positions in the diesel sector. The BLS Replacement Rate for diesel technicians was at 9.1% for 2020 and 2021, however it dropped noticeably to 8.2% in 2022, indicating less diesel technicians leaving the workforce over the next few years.

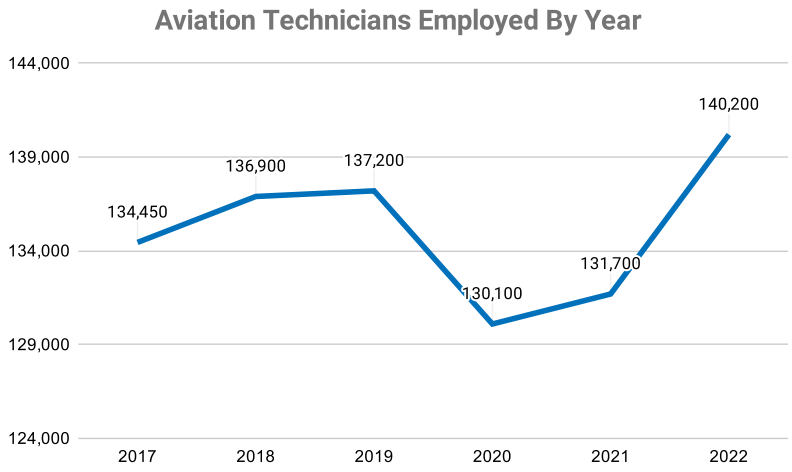


The following chart compares last year's diesel new entrant demand projections to this year's.




## 7 Aviation Technician Employment

This chart represents total industry employment of aviation technicians over the past 6 years. After a one-year drop in 2020, the good news is that employment has grown by slightly over 10,000 technicians in the past 2 years; an increase of nearly 8%.



## 8 Demand for Aviation New Entrant Technicians

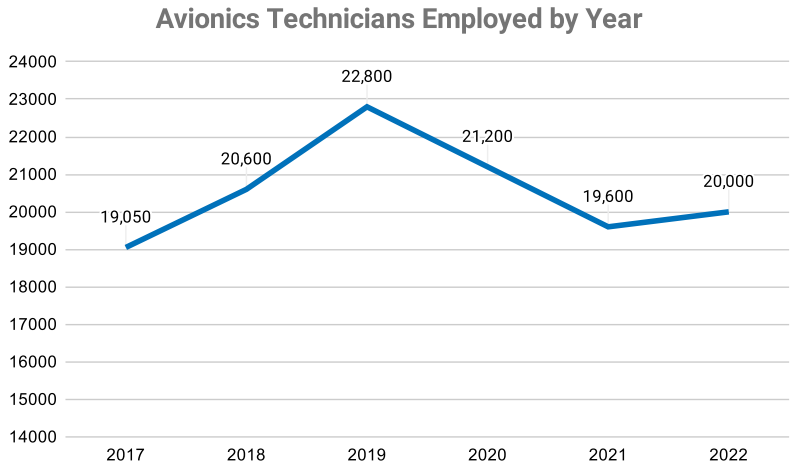
In the aviation sector, we have two distinct job profiles, the avionics technician and the aviation technician. Therefore, we have broken down the demand requirements according to those roles. The following chart illustrates projections for the aviation technician role. New entrant demand remains virtually level, year-over-year for the next 5 years.

| Projections for New Entrant Demand (a) | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| New positions from growth | 700 | 700 | 700 | 700 | 700 |
| Replacement positions from separations | 10,152 | 11,187 | 11,235 | 11,284 | 11,332 |
| Unfilled positions from 2022 - carried over to 2023 (b) | 0 | | | | |
| **Total New Entrant Demand** | **10,852** | **11,887** | **11,935** | **11,984** | **12,032** |

[a] Projections are straight-line projections from BLS 2022 Separations & Openings Report. https://nces.ed.gov/ipeds/use-the-data
[b] There are no unfilled positions from 2022, as the increase in technicians employed from 2021-2022 was greater than BLS projections for technicians needed.

## 9 Avionics Technician Employment

The chart below represents total industry employment of avionics technicians over the past 6 years. It is interesting to note that while aviation technicians were at their lowest level in 2020, avionics technicians experienced their biggest decline one year later, in 2021. The good news is that employment has rebounded for 2022, albeit with a modest gain of 1,200 technicians.



# 10 Demand for Avionics New Entrant Technicians

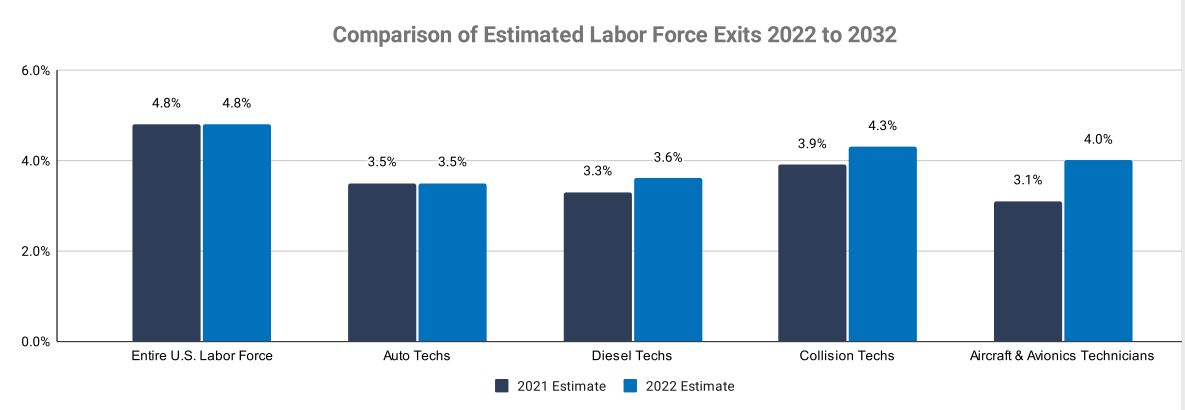
In a similar trend as seen with aviation technicians, new entrant demand for avionics technicians remains at a very consistent level over the next 5 years.

| Projections (a) | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| New positions | 90 | 90 | 90 | 90 | 90 |
| Replacement positions | 1,818 | 1,826 | 1,834 | 1,842 | 1,850 |
| Unfilled positions from 2022 - carried over to 2023 (b) | 0 | | | | |
| **Total New Entrant Demand** | **1,908** | **1,916** | **1,924** | **1,932** | **1,940** |

(a) Projections are straight-line projections from BLS 2022 Separations & Openings Report.
(b) There are no unfilled positions from 2022, as the increase in technicians employed from 2021-2022 was greater than BLS projections for technicians needed.

## Graying of the technician workforce *as related to technician demand*

For the third year in a row, the data shows that the size of the transportation industry technician workforce is being affected by retirements and other departures to a lesser degree than the entire US Labor Force as a whole. However, it is worth noting that three of the five transportation industry segments have a slightly elevated exit rate as compared to last year.



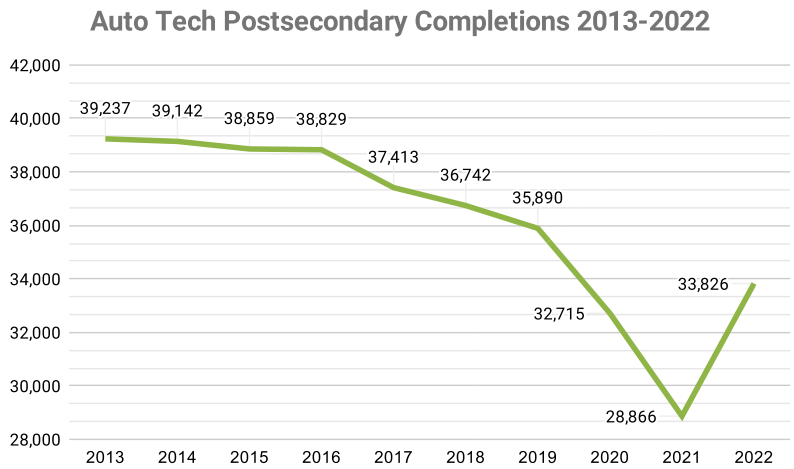
# TECHNICIAN SUPPLY

This report provides completion data for automotive, collision, diesel, aviation and avionics technicians for the 2021-2022 school year from IPEDS. For information on the value and limitations of these numbers, please see the footnotes referenced on page 1 of this report. [1]


[1] IPEDS is the Integrated Postsecondary Education Data System. It is a system of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics (NCES). IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs.

# 1 Postsecondary Automotive Completions

Automotive completions in 2022 showed an impressive gain of nearly 5,000 students, equating to an increase of over 17% in just one year. In doing so, the downward slide of completions that began in 2012 has finally been reversed.




[1] IPEDS is the Integrated Postsecondary Education Data System. It is a system of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics (NCES). IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs.

In looking at the various school types that offer automotive programs, Public, 2-year schools and Private, for-profit 2-year schools graduate the highest number of students (completions).

**Postsecondary Automotive Completions by Sector (a)**

| | 2022 | |
|---|---|---|
| **Sector** | **# Institutions** | **Auto Completions** |
| Public, 4-year or above | 100 | 4,546 |
| Public, 2-year | 504 | 17,470 |
| Public, less-than 2-year | 67 | 1,190 |
| **Total Public** | 671 | 23,206 |
| Private not-for-profit, 4-year or above | 11 | 526 |
| Private for-profit, 4-year or above | 2 | 105 |
| Private, not-for-profit, 2-year | 6 | 152 |
| Private, for-profit, 2-year | 36 | 7,753 |
| Private not-for-profit, less-than 2-year | 3 | 47 |
| Private for-profit, less-than 2-year | 25 | 2,037 |
| **Total Private** | 83 | 10,620 |
| **GRAND TOTAL** | **754** | **33,826** |

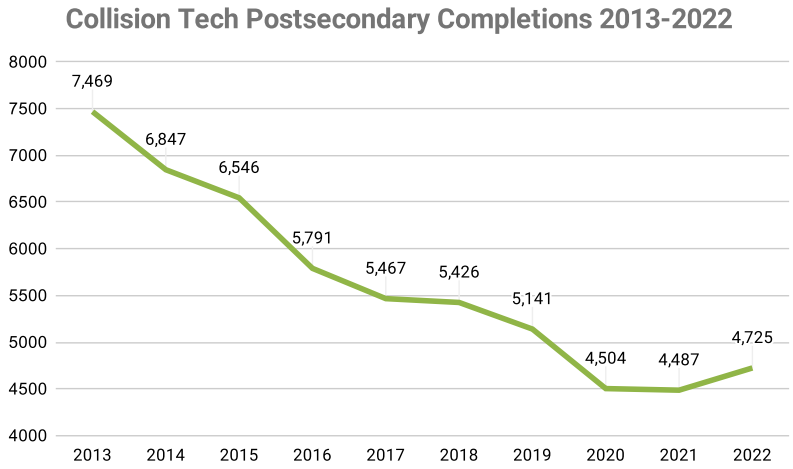
[a] Source: IPEDS database. Completions from first major, Automobile/Automotive Mechanics Technology/Technician programs, Bachelor's degrees and Associate degrees as well as certificates below the B.A. level. https://nces.ed.gov/ipeds/datacenter

In 2022, the 10 largest providers of postsecondary automotive completions were:

| Top 10 Postsecondary Automotive Providers 2022 | |
|---|---|
| **Institution** | **Auto Completions** |
| Universal Technical Institute of Arizona Inc. | 634 |
| Universal Technical Institute-Dallas Fort Worth | 611 |
| Ivy Tech Community College | 509 |
| Universal Technical Institute-Auto Motorcycle & Marine Mechanics Institute-Orlando | 483 |
| NASCAR Technical Institute | 472 |
| Universal Technical Institute of California Inc. | 469 |
| Dallas College | 467 |
| Universal Technical Institute of Texas Inc. | 435 |
| Universal Technical Institute-Bloomfield | 434 |
| GateWay Community College | 417 |

## 2 Postsecondary Collision Completions

As with automotive completions, collision completions have also been dropping year-over-year. However, they also experienced a slight rebound in 2022. With an increase of 238 completions, at just over 5%, the change is not nearly as significant as with automotive completions, however it is clearly going in the right direction.



Again, as seen with automotive programs, looking at the various school types that offer collision programs, Public, 2-year schools and Private, for-profit 2-year schools are graduating the highest number of students.

**Postsecondary Collision Completions by Sector (a)**

| | 2022 | |
|---|---|---|
| **Sector** | **# Institutions** | **Collision Completions** |
| Public, 4-year or above | 42 | 677 |
| Public, 2-year | 193 | 2,500 |
| Public, less-than 2-year | 26 | 265 |
| **Total Public** | 261 | 3,442 |
| Private not-for-profit, 4-year or above | 4 | 27 |
| Private for-profit, 4-year or above | 1 | 1 |
| Private, not-for-profit, 2-year | 1 | 19 |
| Private, for-profit, 2-year | 16 | 1,045 |
| Private for-profit, less-than 2-year | 3 | 191 |
| **Total Private** | 25 | 1,283 |
| **GRAND TOTAL** | **286** | **4,725** |

[(a)] Source: IPEDS database. Completions from first major, Autobody/Collision and Repair Technology/Technician programs, Bachelor's and Associate degrees as well as certificates below the B.A. level. https://nces.ed.gov/ipeds/datacenter

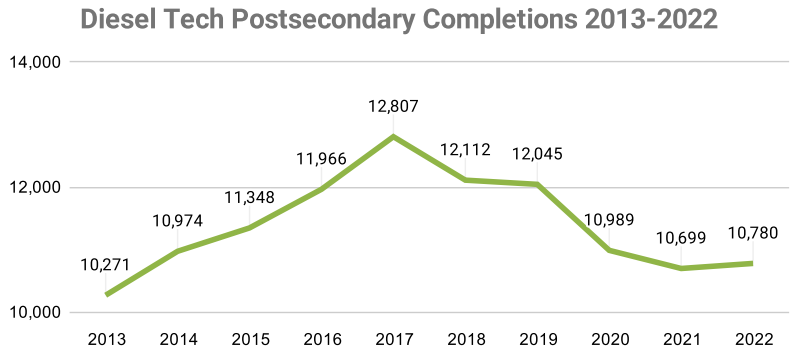
In 2022, the 10 largest providers of postsecondary collision completions were:

**Top 10 Postsecondary Collision Providers 2022**

| Institution | Collision Completions |
|---|---|
| Universal Technical Institute of Texas Inc. | 135 |
| Lincoln College of Technology-Nashville | 114 |
| Dallas College | 97 |
| Lincoln College of Technology-Denver | 95 |
| Universal Technical Institute-Southern California | 89 |
| Automeca Technical College-Bayamon | 84 |
| WyoTech | 83 |
| College of Lake County | 80 |
| Lincoln College of Technology-Grand Prairie | 72 |
| Ohio Technical College | 71 |

# 3 Postsecondary Diesel Completions

Diesel completions have been falling ever since they hit their peak in 2017. However, for 2022, they share a similar story as with collision completions; experiencing a rebound that although is not dramatic; it is encouraging. The sector's gain of 81 completions equates to just under a 1% gain.




Once again, as with automotive and collision, the Public, 2-year schools and Private, for-profit 2-year schools graduate the highest number of students in the diesel sector.

**Postsecondary Automotive Completions by Sector (a)**

| | 2022 | |
|---|---|---|
| **Sector** | **# Institutions** | **Diesel Completions** |
| Public, 4-year or above | 54 | 1,184 |
| Public, 2-year | 217 | 5,633 |
| Public, less-than 2-year | 33 | 420 |
| **Total Public** | 304 | 7,237 |
| Private not-for-profit, 4-year or above | 3 | 326 |
| Private for-profit, 4-year or above | 2 | 148 |
| Private, not-for-profit, 2-year | 4 | 174 |
| Private, for-profit, 2-year | 26 | 2,660 |
| Private not-for-profit, less-than 2-year | 0 | 0 |
| Private for-profit, less-than 2-year | 3 | 195 |
| **Total Private** | 38 | 3,503 |
| **GRAND TOTAL** | **342** | **10,740** |

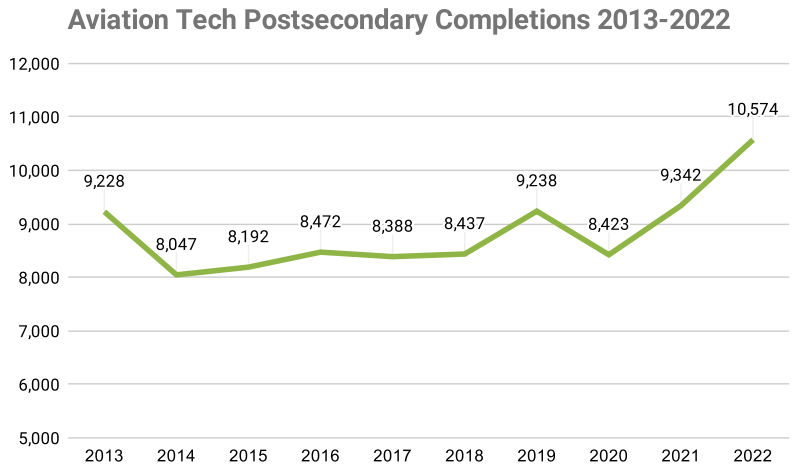
[a] Source: IPEDS database. Completions from first major, Diesel Mechanics Technology/Technician Bachelor's degrees and Associate degrees as well as certificates below the B.A. level. https://nces.ed.gov/ipeds/datacenter

In 2022, the 10 largest providers of postsecondary diesel completions were:

| Top 10 Postsecondary Diesel Providers 2022 (a) | |
|---|---|
| **Institution** | **Diesel Completions** |
| WyoTech | 343 |
| University of Northwestern Ohio | 291 |
| Universal Technical Institute of Arizona Inc. | 285 |
| Gateway Community and Technical College | 239 |
| Texas State Technical College | 227 |
| Universal Technical Institute-Dallas Fort Worth | 195 |
| Universal Technical Institute of Texas Inc. | 194 |
| St. Philip's College | 164 |
| Bates Technical College | 157 |
| Universal Technical Institute of Illinois Inc. | 141 |

## 4 Postsecondary Aviation Completions

This is the first year we are tracking postsecondary aviation completions. We see that the number of completions remains relatively stable over the past 10 years. The larger peaks and valleys from year-to-year that are evident in the other sectors are less present in aviation.



Following the trend set by the other three sectors, Public, 2-year schools and Private, for-profit 2-year schools continue to graduate the highest number of students in the aviation sector.

**Postsecondary Aviation Completions by Sector (a)**

| | 2022 | |
|---|---|---|
| **Sector** | **# Institutions** | **Aviation Completions** |
| Public, 4-year or above | 25 | 1,478 |
| Public, 2-year | 97 | 4,837 |
| Public, less-than 2-year | 7 | 358 |
| **Total Public** | 129 | 6,673 |
| Private not-for-profit, 4-year or above | 1 | 153 |
| Private for-profit, 4-year or above | 7 | 680 |
| Private, not-for-profit, 2-year | 2 | 86 |
| Private, for-profit, 2-year | 21 | 2,897 |
| Private for-profit, less-than 2-year | 1 | 85 |
| **Total Private** | 32 | 3,901 |
| **GRAND TOTAL** | **161** | **10,574** |

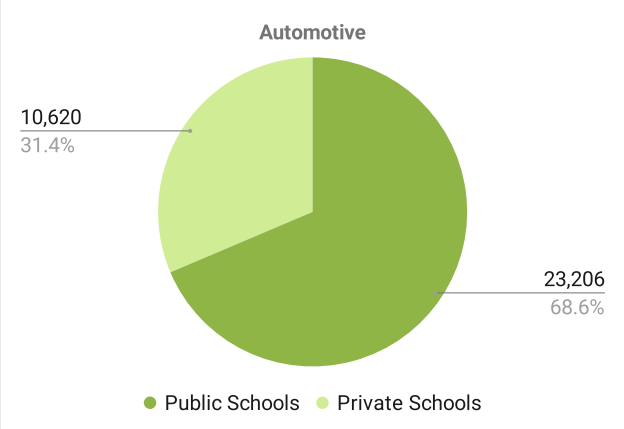
[a] Source: IPEDS database. Completions from first major, Airframe Mechanics and Aircraft Maintenance Technology/Technician Associate degree, First major Airframe Mechanics and Aircraft Maintenance Technology/Technician Bachelor's degree, First major Airframe Mechanics and Aircraft Maintenance Technology/Technician Certificates below the baccalaureate total. https://nces.ed.gov/ipeds/datacenter/

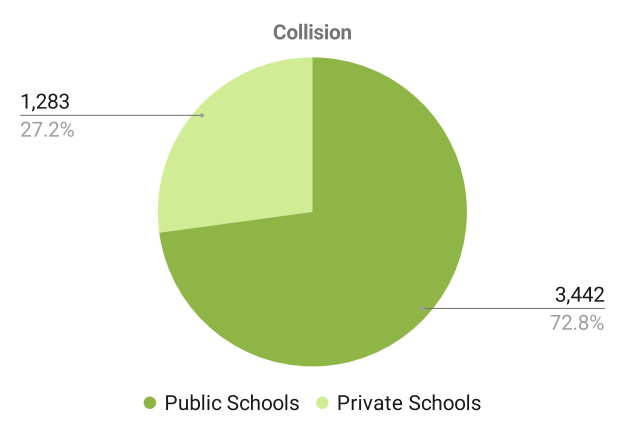
Listed below, are the top-performing schools in the aviation sector. Note that this represents graduates from both the avionics and aviation technician programs combined.

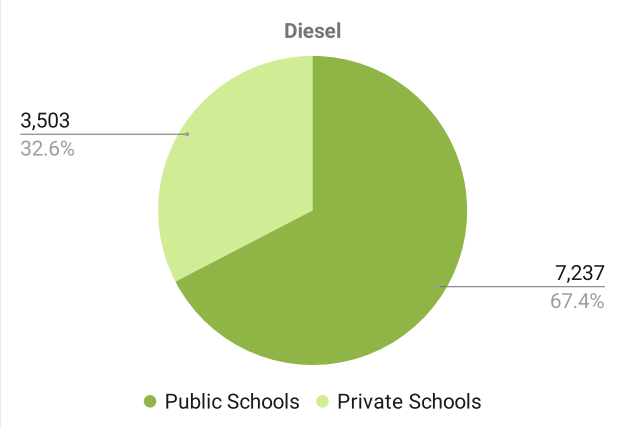
**Top 10 Postsecondary Aviation Providers 2022**

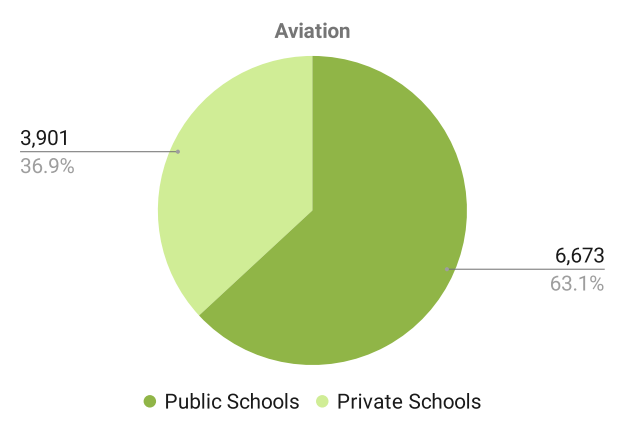
| Institution | Aviation Completions |
|---|---|
| Antelope Valley Community College District | 559 |
| Embry-Riddle Aeronautical University-Worldwide | 395 |
| Wichita State University-Campus of Applied Sciences and Technology | 377 |
| National Aviation Academy of Tampa Bay | 360 |
| MIAT College of Technology | 320 |
| Aviation Institute of Maintenance-Atlanta | 248 |
| Tarrant County College District | 236 |
| Aviation Institute of Maintenance-Dallas | 208 |
| Chandler-Gilbert Community College | 202 |
| Enterprise State Community College | 200 |

The following charts display the distribution of graduates (completions) between public schools and private schools in 2022. As in the past, the total number of graduates from public schools is greater than with private schools, due to the large number of public schools. However private schools average a higher number of graduates annually per school; 108 graduates in comparison to the average of 30 graduates in public schools.



# CONCLUSION

The two most important measurements we have available to us are the total number of technicians employed and the number of postsecondary completions in transportation technical programs. These are the measurements that represent where we, as an industry, can make our greatest impact through our combined efforts in actively championing technical careers. While technician demand is certainly an important metric, we have no control over it. Demand is driven by the economy and by vehicle sales volumes, which continue to be in a state of flux.

Therefore, it is most encouraging to see the current trends that are developing, as shown in this year's report. First of all, the number of postsecondary graduates in the automotive, collision, diesel and aviation sectors have all increased, year-over year. That has not been seen in the past decade. Additionally, we have seen that the number of technicians employed has increased year-over year in every sector with the exception of diesel.  The technician workforce in the sectors we measure has grown by 57,000 employees from 2021 to 2022. That equates to a 4.3% increase; outpacing even the growth of the overall US Labor Force at 4.0%. We are beginning to close the gap in the transportation technician shortage. In last year's report, we listed the number of technicians needed in the next 5 years at nearly one million. This year, the number is down to 795,000!

The core strategies in addressing the technician shortage that have been discussed in the past remain the same; as an industry we need to stay the course by:

**ENGAGING with students** beginning in middle school and continuing through postsecondary

**BUILDING relationships** with local school instructors and administrators

**UTILIZING the power of internships, mentorships and apprenticeships**

**PUSHING enrollment** in post-secondary training programs to students as a means to **jump-start their careers**

**ENGAGING** with parents, school faculty and administrators, as well as local community leaders to **increase exposure and awareness of technical career paths**

**PROVIDING funding** of scholarships for technical training

**SUPPORTING our non-profit organizations** that are engaged in **addressing the technician shortage**, both through active partnerships and with funding

# QUICK FACTS ON INDUSTRY DEMAND FOR NEW TECHS

OVER 465000

**NEW ENTRANT AUTOMOTIVE TECHS**
WILL BE NEEDED BETWEEN 2023 AND 2027

NEARLY 330000

**NEW ENTRANT COLLISION TECHS**
WILL BE NEEDED BETWEEN 2023 AND 2027

OVER 352000

**NEW ENTRANT DIESEL TECHS**
WILL BE NEEDED BETWEEN 2023 AND 2027

OVER 88000

**NEW ENTRANT AVIATION & AVIONICS TECHS**
WILL BE NEEDED BETWEEN 2023 AND 2027


WELL OVER

**¾ OF A MILLION**

**TOTAL TECHNICIANS NEEDED**

BETWEEN 2023 AND 2027

# APPENDIX A

## Methodology to determine technician demand reductions attributed to Electric Vehicles

The methodology utilized in this year's report to determine the impact of electric vehicles (EV) on automotive technician demand was similar to the methodology for the past two years. However, this year, in addition to looking at battery-electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV) were also included.

Light Vehicle Sales Forecast numbers used were **those provided by Hedges Company**.

Sales forecast numbers for EVs were **those provided by Statista.com**.

Actual maintenance cost comparisons between BEVs, PHEVs and internal combustion engine (ICE) powered vehicles are still difficult to locate. As in the past, we used the results of **a 2021 survey from the U.S. Department of Energy, Vehicle Technologies Office**, and this year, we also referenced **a study by Consumer Reports** as well as **an NADA article quoting a Kelley Blue Book study**. The final numbers utilized in our calculations were a compilation utilizing data from all three sources.

The cost savings in maintenance seen with BEV and PHEV vehicles were then reduced by extracting the labor-only costs from the total costs (parts & labor). An industry average of a parts-to-labor ratio of .8 to 1 was utilized. The resulting savings were then applied to all BEV and PHEV vehicles forecast to be included in the total vehicles in operation (VIO) for 2023 to 2027.

| Average savings in maintenance costs for BEV and PHEV vehicles over ICE vehicles | | | | | |
|---|---|---|---|---|---|
| **Powertrain Type** | **Consumer Reports** | **Dept of Energy** | **NADA/Kelly Blue Book** | **Average % Savings over ICE** | **Factor to enter into spread-sheet** |
| BEV | 50.0% | 39.6% | 7.4% | 32.3% | 67.7 |
| PHEV | 48.4% | 10.9% | | 29.7% | 70.3 |
| ICE | | | | | |

With parts to labor ratio of .8 to 1, for every dollar of BEV or PHEV service, we will only use 56% or 56 cents of every ICE dollar.

## Final calculation for reduction in techs needed due to BEV and PHEV vehicle population

Labor is 56 cents out of every BEV maintenance dollar
56 cents x .323 = **18% reduced labor cost for BEV vehicles**

Labor is 56 cents out of every PHEV maintenance dollar
56 cents x .297 = **17% reduced labor cost for PHEV vehicles**

With the adoption of EVs by consumers increasing, particularly over the past two years, it is often questioned whether the EV vehicle population will have a significant influence on technician demand. The reality is it has had less of an impact than one might think. Consider that in 2022, the EV percentage of total light vehicle sales was 7.1%. You must bear in mind that this was only one year of sales in comparison to an entire vehicle population that has been purchased over the past many years. In light of that reality, the total EV presence in the automotive world, and thus the total impact on technician demand, becomes less significant. At the end of 2022, the cumulative number of BEV and PHEV vehicles in the US was only 5.6% of the entire vehicle population. This is not to say that EVs will not have an impact on technician demand in the future. But any significant impact is still years in the future.

# APPENDIX B

## Backgrounds of TechForce Foundation and Greg Settle

**TechForce Foundation** is a nonprofit, 501(c)(3) with the mission to champion all students to and through their education and into careers as professional technicians. TechForce powers the technician workforce by awarding more than $2.3 million in scholarships and grants annually to financially disadvantaged students; changes perceptions towards this evolving, 'new collar' STEM career; and provides local career exploration and workforce development programming. TechForce's online network of students, working technicians, instructors, employers, industry professionals, and enthusiasts committed to championing the technician workforce is the conduit through which the charity delivers its free resources, programs, and career hub for the benefit of aspiring technicians. For more information, visit techforce.org. Follow us on TikTok, Facebook, Instagram, Twitter/X, Youtube and LinkedIn.

**Greg Settle**, author of this report, is currently retired but holds the position of Director Emeritus, National Initiatives for TechForce Foundation. He also serves as a contributing writer for TechForce Foundation. Mr. Settle graduated from the Automotive and Diesel Technology programs at Universal Technical Institute in Phoenix, AZ. He spent 43 years with the Mercedes-Benz brand, beginning his career as a dealership technician, and subsequently moving through roles as Shop Foreman, Service Manager, and Fixed Operations Director. After moving to Mercedes-Benz, USA he held various field representative and engineering roles before joining the MBUSA training organization. Over several years he served as National Manager of Training Operations, Manager of Retail Training, and Manager of Technical Training and Curriculum. After retiring from MBUSA, he worked at TechForce Foundation as Director of Industry Partnerships and Director, National Initiatives. Mr. Settle also served multiple terms on the Board of Directors for Automotive Youth Educational Systems (AYES) and the I-CAR Education Foundation.