

CTE LABOR MARKET TOOL

This resource provides data snapshots and insights about the overall automotive and transportation labor market, and a closer focus on the Aircraft Mechanics and Service Technicians, Automotive Service Technicians and Mechanics, and Ship and Boat Captains and Operators occupations as those are popular areas for CTE automotive and transportation programs. It also includes some guiding questions to help apply the data to your school's CTE program.

Careers in automotive and transportation include many different kinds of jobs, some that focus on building or repairing all kinds of vehicles, and others that involve driving vehicles for companies or public transportation. People with these occupations work in many different settings, including factories, repair shops, trains, and ships. The three largest automotive and transportation occupations in New York City are Laborers and Freight, Stock, and Material Movers, Hand; Light Truck or Delivery Services Drivers; and Heavy and Tractor-Trailer Truck Drivers. Chart 1 below shows the many different kinds of NYC organizations hiring professionals in automotive and transportation.

Why use this resource?

- Use as a critical tool with your school's self study group to guide program planning and improvement aligned to labor market data
- Use as a critical tool to prepare students for postsecondary planning towards high-demand careers
- Feel prepared and confident when responding to NYSED questions about incorporating labor market data into your work

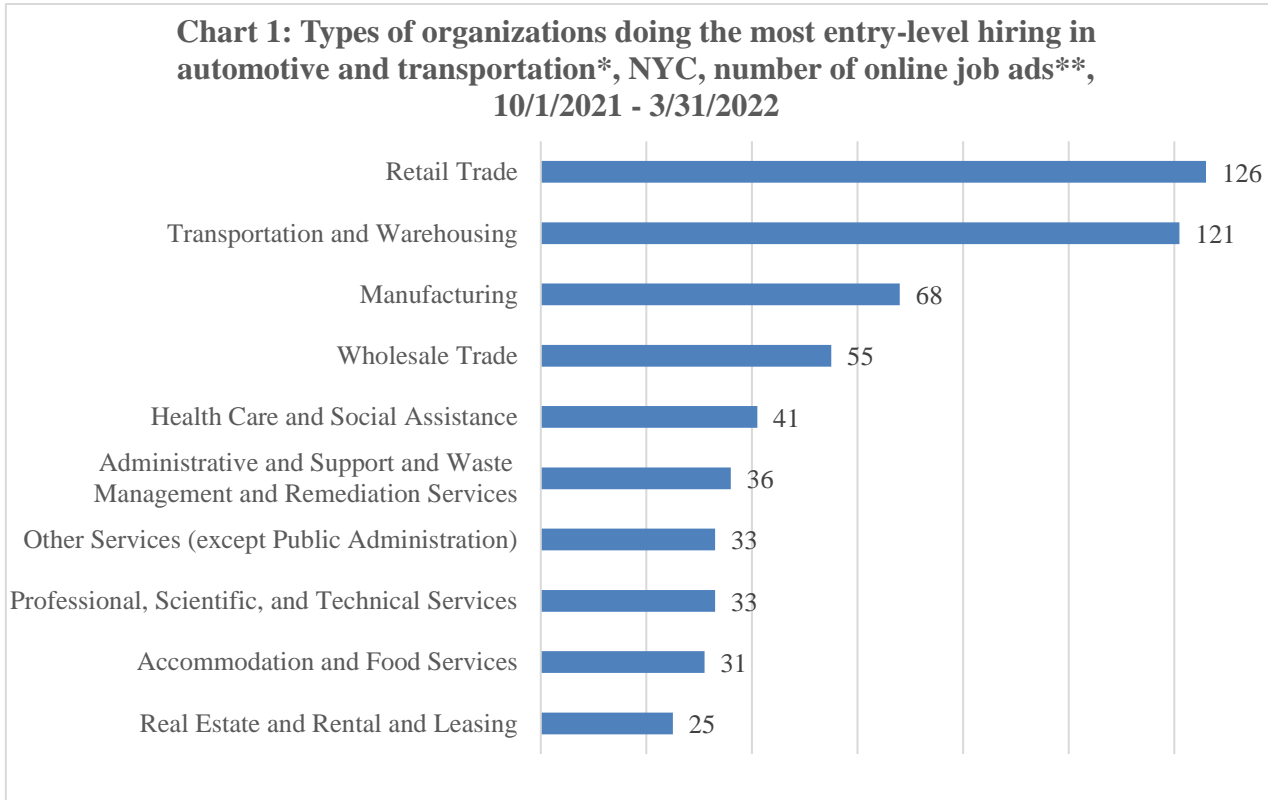


Chart 2 provides an overview of New York City employment in each of the three focus occupations. As you can see, the number of jobs in two of the occupations is expected to grow by 2028, but for one occupation – automotive service technicians and mechanics – the number of jobs is expected to contract by 3.9%. It's important to keep in mind that even though these predictions help us understand the labor market's trajectory, things like new technologies or innovations, shifts in the economy, or major unexpected shocks like the COVID-19 pandemic can impact their accuracy.

Chart 2: Current & projected employment for 3 focus occupations, NYC, 2018 - 2028

	# Employed in NYC****	Projected NYC Employment***		Change Over Time (2018-2028)	
		2018	2028	Net	Percent
Aircraft Mechanics and Service Technicians	2,470	2,120	2,150	30	1.4%
Automotive Service Technicians and Mechanics	7,320	11,240	10,800	-440	-3.9%
Ship and Boat Captains and Operators	960	1,200	1,300	100	8.3%



IN THIS RESOURCE...

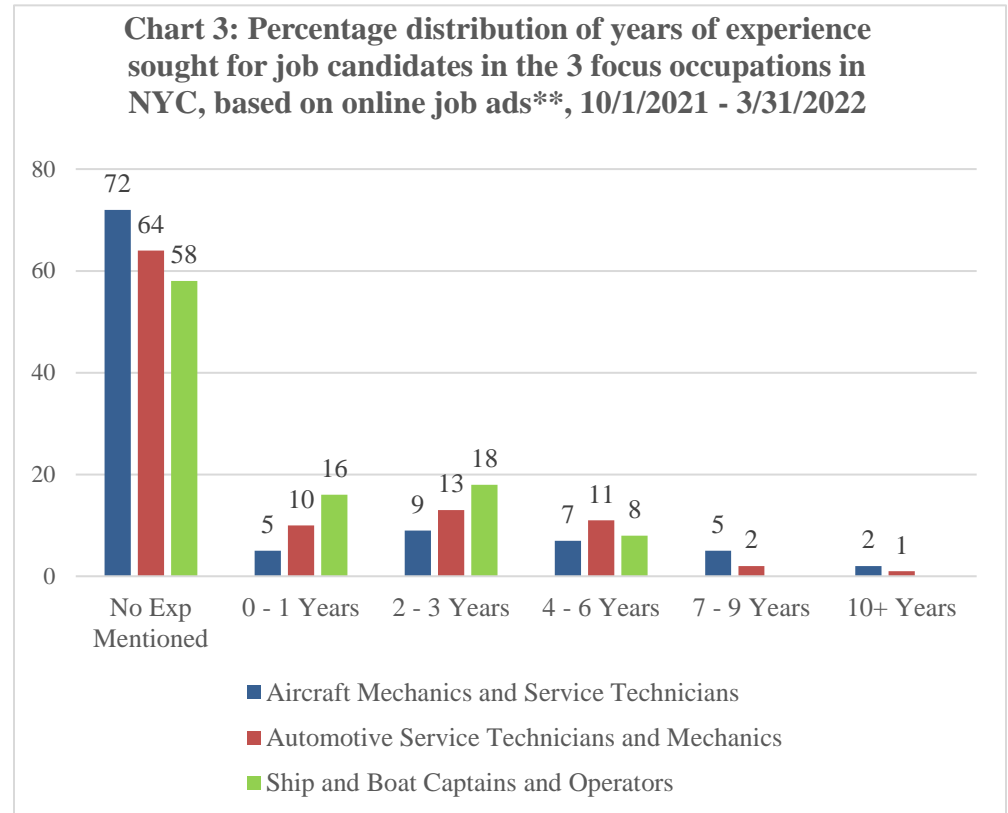
LOOKING DEEPER: WHO'S BEING HIRED IN THIS FIELD? (P.2)

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Looking Deeper: Who's Being Hired in This Field?

- Over 50% of job ads for each of the three focus occupations did not specify years of experience sought. This suggests that other criteria, such as skills and certifications, may be more important to employers in making hiring decisions.
- There is overlap in the employability skills that organizations look for in job candidates, with communication and operations skills in-demand for all three focus occupations.
- Entry-level wages for only one of the three focus occupations - aircraft mechanics and service technicians - meet the living wage for a single adult in NYC (\$48,320*****).
- The majority of job ads for the three focus occupations either did not specify an educational credential or sought a HS diploma, though for ship and boat captains and operators approximately one-third of job ads sought at least a bachelor's degree.



The chart below reflects entry-level wages****, as well as the most in-demand (i.e., among the five most frequently requested and in at least 10% of online job ads*****) employability skills, technical skills, and certifications** for the three focus occupations from 10/1/2021 – 3/31/2022. Values in parentheses reflect the percentage of online job ads in which each skill is mentioned.

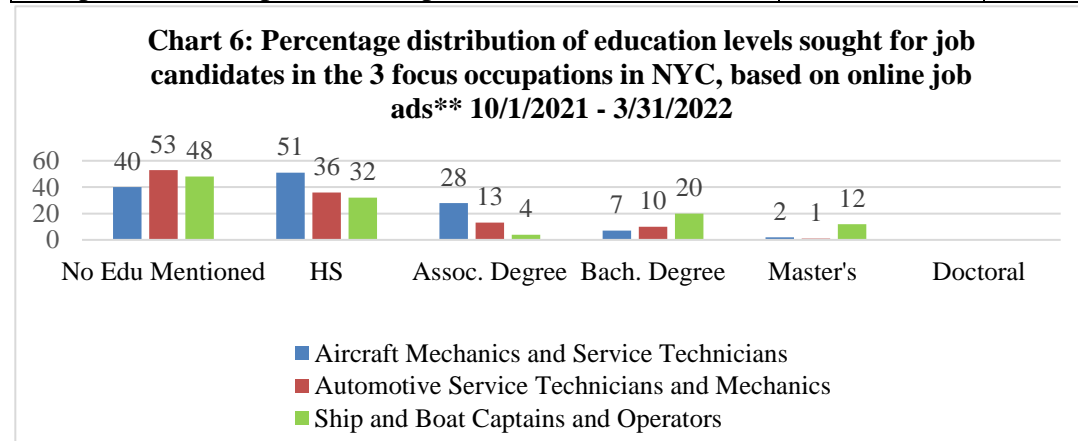
Chart 4: Entry-level wages & in-demand skills for 3 focus occupations

Occupation	Entry-level Wage	In-demand Employability Skills	In-demand Technical Skills	In-demand Certifications or Recommended by this Commission (+)
Aircraft Mechanics and Service Technicians	\$55,600	Communications (40%), Troubleshooting (Problem Solving) (23%), Lifting Ability (21%), Leadership (19%), and Operations (19%)	Aircraft Maintenance (47%), Federal Aviation Administration (44%), Accounts Payable (30%), Avionics (28%), and Federal Aviation Regulations (19%)	Driver's License (47%), Airframe and the Powerplant certification (A&P)
Automotive Service Technicians and Mechanics	\$31,200	Communications (35%), Customer Service (34%), Management (19%), Sales (15%), and Operations (14%)	Automotive Services (17%), Mechanics (12%), and Brakes (11%)	Driver's License (46%), Automotive Service Excellence (ASE)+
Ship and Boat Captains and Operators	\$41,530	Communications (50%), Management (38%), Operations (38%), Cooperation (22%), and Creativity (22%)	Auditing (22%), Emergency Response (18%), Safety Standards (16%), Environment Health and Safety (16%), and Federal Aviation Administration (14%)	Transportation Worker Identification Credential (TWIC) Card (16%), Airline Transport Pilot License (12%), and Driver's License (10%)

Chart 5 shows the ethnicity and sex of people who work in the three focus occupations in NYC****. As you can see, these jobs are overwhelmingly held by males while there is greater diversity across ethnicities, except for ship and boat captains and operators – an occupation whose jobs are almost exclusively held by white men.

Chart 5: Sex and ethnicity distributions for 3 focus occupations

Occupation	Ethnicity %						Sex %	
	American Indian/Alaska Native	Asian/Pacific Islander	Black	Hispanic	White	Multi-ethnic/Other	Female	Male
Aircraft Mechanics and Service Technicians	0.00	6.42	18.47	40.74	32.68	1.68	4.96	95.04
Automotive Service Technicians and Mechanics	0.67	10.55	22.93	40.33	18.89	6.63	2.06	97.94
Ship and Boat Captains and Operators	0.00	2.11	2.88	1.44	92.81	0.77	2.88	97.12



Post-secondary Planning

CTE students are encouraged to pursue education and training after graduation from high school in order to enter into an in-demand career with family-sustaining wages in NYC. The following is a list of CUNY and SUNY degree programs aligned with the automotive & transportation industry as well as non-degree programs that result in an industry-endorsed certification and/or college credits. Some CTE programs have robust partnerships with CUNY programs that are codified by an articulation agreement. These agreements provide a range of student benefits such as advanced standing, early college credit, and preferential placement. CTE school leaders, teachers, and work-based learning coordinators are encouraged to connect with the school counseling teams at their school to determine strong postsecondary options for their students. Please reach out to your Industry Engagement Manager for more information about the articulation agreements.

- Chart 7 is a sample of the over 40 CUNY & SUNY programs focused on automotive and transportation spread across New York State, including associate and bachelor’s degree opportunities.
- Chart 8, on the following page, provides a list of non-degree automotive and transportation occupation-focused training opportunities available through a variety of different NYC-based organizations.

Chart 7: CUNY & SUNY post-secondary programs related to automotive and transportation

School	Academic program & credential	DOE/CUNY articulation agreement’s benefits
CUNY Bronx Community College	Automotive Technology AAS	Prior Learning Credit: 1 credit
CUNY Kingsborough Community College	Maritime Technology AAS	
SUNY Alfred State College	Autobody Repair AOS	
SUNY Alfred State College	Automotive Service Technician AOS	
SUNY Canton	Automotive Technology AA	
SUNY Columbia-Greene Community College	Automotive Technology AAS	
SUNY Columbia-Greene Community College	Automotive Technology AOS	
SUNY Corning Community College	Auto Body and Collision Repair AOS	
SUNY Delhi	Automotive Technology AAS	
SUNY Delhi	Automotive Mechanics AAS	
SUNY Dutchess Community College	Aviation Science: Pilot (AVI) AS	
SUNY Dutchess Community College	Aviation Maintenance Technician (AMT) AAS	
SUNY Dutchess Community College	Aviation Management (AVM) AS	
SUNY Erie Community College	Automotive Service Technician AS	
SUNY Erie Community College	Automotive Technology AS	
SUNY Erie Community College	Automotive Trades: Autobody Repair AS	
SUNY Farmingdale State College	Aeronautical Science - Professional Pilot BS	
SUNY Farmingdale State College	Aviation Administration BS	
SUNY Hudson Valley Community College	Automotive Management AAS	
SUNY Hudson Valley Community College	Automotive Technical Services AOS	
SUNY Hudson Valley Community College	Automotive Technical Services-Autobody Repair AOS	
SUNY Maritime College	Marine Operations BS	
SUNY Maritime College	Marine Engineering BEng	
SUNY Maritime College	Marine Transportation BS	
SUNY Maritime College	Naval Architecture BEng	
SUNY Maritime College	Marine Operations - Engine (Unlimited Horsepower) AAS	
SUNY Maritime College	Maritime Technology - Deck (1,600 Mate) AAS	
SUNY Maritime College	Maritime Technology - Engine AAS	
SUNY Morrisville	Automotive Management BBA	
SUNY Morrisville	Automotive Technology BTech	
SUNY Morrisville	Auto Body Technology AAS	
SUNY Morrisville	Automotive Technology AAS	
SUNY Morrisville	Automotive Technology – Ford ASSET AAS	
SUNY Morrisville	Diesel Technology AOS	
SUNY Morrisville	Diesel Equipment Technology AAS	
SUNY Morrisville	Mechanical Engineering Technology AAS	
SUNY Onodaga Community College	Automotive Technology AAS	
SUNY Rockland Community College	Automotive Technology AAS	
SUNY Schenectady County Community College	Aviation Science - Pilot Option AS	
SUNY Schenectady County Community College	Aviation Science - Non-Pilot Option AS	
SUNY Schenectady County Community College	Air Traffic Control AAS	
SUNY Suffolk	Automotive Business AAS	
SUNY Suffolk	Automotive Service Specialist AAS	
SUNY Suffolk	Toyota T-TEN Automotive Service AAS	

Chart 8: Non-degree automotive and transportation training opportunities

Brooklyn Workforce Innovation's Red Hook on the Road
Career Discovery NYC's Commercial Driver Training Program
CHLDC's Transportation Advanced Training
COOP Tech's Automotive Technician Program
Kingsborough Maritime Apprenticeship Technician Program
MTA NYCT Department of Buses Apprenticeships
Workforce1 Career Center System

What Next? Guiding Questions & Web Resources

“Describe how current labor market data has informed program design and choice of technical assessment.”

The prompts below are designed to promote discussion and ideas for program planning, and to help you answer the question above from the CTS self study tab and the NYSED CTE application (Part 2, Section C).

How can we incorporate this report’s data insights into our...	Data points to consider:
...program focus?	Introductory paragraph overviews on page 1 and charts 1, 2, 3, 4
...technical and employability skills?	Chart 4
...articulation agreement?	Charts 6, 7
...technical assessments?	Chart 4
...career pathway options?	Charts 1, 2, 7, 8

Consider the questions below keeping in mind the labor market data points you’ve explored in this report and the questions that you’ve answered above.

Select three ways that you might adjust your program in response to labor market data:

- Program focus
 Articulation agreement
 Technical assessments
 Career pathway options
 Technical and employability skills
 Other:

Which one of these three adjustments could most easily be implemented this school year?

Which one of the three would make the biggest difference for the quality of your program? Why?

Curious to explore more? Check out these web resources:

- CTE NYC website: www.cte.nyc
- CTE Industry Commission resources: bitly.com/CTEIndustryEngagement
- CTE College and Career Planning Team's postsecondary milestones toolkit: <https://bit.ly/35uglcc>
- CareerOneStop labor market data explorer: www.careeronestop.org

Technical Notes & Data Sources:

* “Automotive and transportation” occupations have been operationalized as occupations with a 2010 Standard Occupation Classification (SOC) code starting with the two-digit “53-XXXX” (“Transportation and Material Moving Occupations”) or with the three-digit “49-3XXX” (“Vehicle and Mobile Equipment Mechanics, Installers, and Repairers”).

** These analyses were conducted using the EMSI Burning Glass Analyst proprietary web-based research platform. Please note that some intra-occupation percentage totals may equal >100% if the employer indicated a range of minimum/preferred years of experience or education-attainment level. “Entry-level” jobs are considered to be those with job advertisements that specified 0-1 year of experience.

*** New York City 2018-2028 long-term employment projections are determined by New York State Department of Labor (NYSDOL). Please note that these estimates include self-employed workers, which is not always true of other estimates such as the OEWS estimates. The occupation Ship and Boat Captains and Operators (53-5020) include two SOCs: Captains, Mates, and Pilots of Water Vessels (53-5021) and Motorboat Operators (53-5022). The long-term projection reflects trends in 53-5021 as no data is available for 53-5022.

**** NYSDOL, Occupational Employment and Wage Statistics (OEWS) estimates for New York City (July 2021 release). NYSDOL adjusted wages to reflect levels in the first quarter of 2021. NYSDOL operationalizes “Entry Wage” as the average of the bottom third of wages. The occupation Ship and Boat Captains and Operators (53-5020) include two SOCs: Captains, Mates, and Pilots of Water Vessels (53-5021) and Motorboat Operators (53-5022). Only Captains, Mates, and Pilots of Water Vessels (53-5021) have both employment and entry wage data in OEWS, which was 960 and \$41,530.

***** Demographics based on U.S. Census, American Community Survey (ACS) estimates, NYC 2015-2019 5-year sample, IPUMS release February 2021. Please note that the ACS does not ask for respondents’ gender, only biological sex. As a result, there are only results available for male and female categories. To learn more about this, please see here: <https://www.census.gov/acs/www/about/why-we-ask-each-question/sex/>

***** Massachusetts Institute of Technology’s (MIT) Living Wage calculator, 2020 estimate for the five counties of New York City, NY (<https://livingwage.mit.edu/metros/35620>; data accessed April 2022), adjusted to the first quarter of 2021 using the U.S. Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (New York-Newark-Jersey City metropolitan area, not seasonally adjusted).

***** Additional skills that are in-demand as measured by being mentioned in at least 10% of online job ads for workers but not among the top 5 most frequently requested are:

Aircraft Mechanics and Service Technicians: Additional in-demand technical skills include hydraulics, mechanics, technical communication, hand tools, airworthiness, electronics, and structural repairs.

Automotive Service Technicians and Mechanics: Additional in-demand employability skills include troubleshooting (problem solving), detail oriented, lifting ability, and computer literacy.

Ship and Boat Captains and Operators: Additional in-demand employability skills include enthusiasm, leadership, Microsoft Office, time management, customer service, computer literacy, energetic, innovation, service-oriented, written communication, teamwork, cleanliness, training and development, incident reporting, and detail oriented.