

# Cartographer

By Gina Hartoog

Way back in primary school you were probably introduced to atlases and maps – the fascinating world of cartography. You most likely had to draw a map of your school or chart a course from home to school. The oldest known maps on the planet date back to 2300 BC, primitive etchings in tablets of clay from ancient Babylonia... far removed from modern digital maps we access on our smart phones, iPads or Garmin's today.

## Charting a course

**C**artographers chart and draw maps for various industries. Jane Govender is a cartographer working in the aviation sector and is employed at the South African Civil Aviation Authority (SACAA) in Midrand. She started her career in business administration, before moving into technical draughting in the military field at Denel Aviation. Later, Jane joined the CAA as a cartographer, she explains: "Cartography is more than just the drawing of maps and charts - it requires plenty of research, study, a good mathematical ability and the aptitude to present complex information such as diagrams, formulas, charts and spreadsheets, in the form of conventional maps." Cartography is a broad field and many industries from mining to map publishing companies employ cartographers to produce charts for their industries. The type of maps produced by the cartographer depends on the employer and the purpose for which the map is required.

## Aviation cartography

Aviation cartographers at the SACAA, produce charts which are published in the South African Aeronautical Information Publication (AIP). The charts serve as a visual reference for pilots and contain essential information on the routes they fly.

Cartographers gather information from various sources - aerial photographs, geographical information, survey data and flight procedures (designed by pilots specialists) including elevation, distance, longitude and latitude, and use the information to produce detailed navigational charts for a specific aerial route.

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"Charts must be very accurate and provide essential information for the pilot," explains Jane. "This includes obstacles in the flight path, beacons and significant points, airspace information, danger and restricted areas, magnetic variation, sector altitudes and frequencies on the route." The cartographer uses computer software and new technology to create charts. These are checked extensively before they are published.

## Flying high

Jane and her colleagues were involved in a two-year long project to chart new flight routes from various centres to the new King Shaka International Airport in Durban. The cartographer's role is usually the final part of the project, explains Jane. "This is where all the information from various sources is encapsulated and put into chart form. New routes must also be test flown before the chart is finally published."

In order to excel in the career, Jane says you need to be able to read maps and have a passion for drawing, good spatial perception and an interest in geography and the aviation industry. Although the work is mainly office based, days are varied and there is an opportunity for travel.

## Quick facts

### Salary

Starting R250 000 per annum (R20 000 per month) - dependent on qualifications/industry

### Qualifications

NDip Cartography

### Working hours

Office hours (overtime to complete projects/meet deadlines)

### Places of Employment

Aviation industry, mining, engineering, architecture, map publishing companies, GPS electronics firms, government, municipalities

## Above the bench mark

Safety aspects are critical and deadlines loom quickly. Being productive under pressure is par for the course in this industry. You need to stay calm and maintain a professional attitude. The excitement lies in the end product. "It's great to know that you have been part of a successful project," laughs Jane. "If you are really fortunate, you may be invited to fly the route you have charted and that's an incredible feeling!"

Jane says aiming high is what it takes to be successful, but the journey must not be a hurried one. "Be prepared to take it one step at a time," she says. "Never be in a rush to get there and remember to climb that ladder one step at a time." She interprets a pertinent quote from Mahatma Gandhi: "The journey through life takes each of us down different pathways, yet our destination at the end remains the same." ■



Similar

Architect, architectural technologist, draughtsman, hydrologist, land surveyor

## Subject guidelines

- Mathematics
- Physical Sciences
- Geography

Contact your training Institute for more specific information

## Places to study

- TSHWANE UNIVERSITY OF TECHNOLOGY  
Tel: 086 110 2421  
National Diploma: Cartography  
3 years full-time study  
www.tut.ac.za
- CAPE PENINSULA UNIVERSITY OF TECHNOLOGY  
Tel: 021 959 6271  
National Diploma: Cartography  
3 years full-time study  
www.cput.ac.za
- UNIVERSITY OF PRETORIA  
Tel: 012 420 3111  
BA Geography  
3 years full-time study  
www.up.ac.za
- NELSON MANDELA METROPOLITAN UNIVERSITY  
Tel: 041 504 1111  
BSc Geography  
3 years full-time study  
www.nmmu.ac.za
- UNIVERSITY OF CAPE TOWN  
Tel: 021 650 2699  
BSc Geography  
3 years full-time study  
www.uct.ac.za

## Interesting websites

- South African Civil Aviation Authority  
www.caa.co.za
- AvJobs.com  
www.avjobs.com
- Federal Aviation Administration  
www.faa.gov



Aviation