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Flying safe

You probably know about air traffic control officers (ATCOs) who play a critical role in the operations of hundreds of aircraft, day in, day out. Are you, however, aware of the people who make it possible for ATCOs and pilots to safely complete journeys using key technological aids? While these professionals represent the front-end of such operations, communication, navigation and surveillance (CNS) professionals provide back-end support for air traffic services.

A part of the Airports Authority of India (AAI), CNS engineers and executives plan, procure, check, install, maintain and operate CNS/air traffic management systems and equipment at all airports and aeronautical communication stations in the country.

Central to flying
"Once a pilot submits a flight plan to the air traffic controller, he asks for certain things: 'I should be provided radio-communication (C). I should be given navigational (N) guidance. And I should be provided surveillance (S) monitoring.' This is CNS," explains a Delhi-based senior CNS official, who spoke on the condition of anonymity. "CNS (infrastructure) is the backbone with which you manage air traffic. Without this infrastructure in excellent order, air traffic service can't be excellent."

CNS engineers and executives are also required to execute corrective and preventive maintenance. "They not only need to monitor the performance, they also need to continuously analyse the performance of the facilities because of operational risks involved," says Subit Kobiraj, general secretary, CNS Officers' Guild.
"If there's a system problem, we cannot go home unless it's rectified," he says.

"CNS is a very challenging job, which is not visible (to the public)," adds his colleague, who refused to be named. CNS professionals say that the job has become more challenging due to the increasingly sophisticated systems and equipment being used. While these are user-friendly, their "upkeep is complicated", says one official. Kobiraj says, "The work requires continuous learning and updating of knowledge with the rapid advancement of technology and the variety of state-of-the-art electronic equipment with different makes and models that are in service at the AAI."

Immense opportunities
Recruitment and training of CNS professionals is a contentious issue. According to the Guild, the AAI has a shortage of about 1,400 CNS professionals, including 250 in the non-executive cadre.

There are many things in favour of this profession. For one, CNS professionals acquire a wide range of expertise. Kobiraj says that if a person joins a telecom, engineering, or oil company, "he'll be working only on the radar or only on telecommunications. (In our profession), the scope is enormous. A CNS professional works with a variety of equipment from global manufacturers. The right candidate can rise to the top position," which is the post of chairman of the AAI.

A lady engineer said the shift cycle has its upside: after the morning shift, she is able to get more time with her family in the evening. The seniors are "accommodating. People understand your needs. If they can help, they do," says the officer, who is one of the 100 or so women (of the total 1,450 CNS personnel) working at various levels in AAI's CNS division.

What's it about?
Air traffic controllers and pilots use communication, navigation and surveillance (CNS) facilities to manage air traffic movement. The Airports Authority of India (AAI) provides CNS services at all Indian airports, including privately operated ones, and limited navigation services at defence airfields. These include:
- Maintenance of CNS/air traffic management (ATM) system/equipment
- Calibration of flight and ground radio navigation aids
- Certification of CNS/ATM system/equipment
- Modification of operational CNS/ATM equipment
- Corrective maintenance
- Preventive maintenance
- Installation of CNS/ATM system/equipment
- Develop, review and modify CNS/ATM system/ equipment, and/or maintenance procedures

Clock Work
At Delhi's international airport, CNS professionals work in morning, afternoon and night shifts. The morning shift of a CNS officer on an average day looks like this.
7.15 am - 7.30 am: (15-minute overlap time between two shifts). Relieve duty officer who is finishing his night duty. Take briefing from him on the status of equipment/ facilities
7.30 am onwards: Check the status of the power supply, UPS. Check critical parameters, readings, status indication of the equipment and maintain records
10.30 am: Have tea
10.45 am onwards: Carry out the first level of maintenance
1.15 pm: Brief the person relieving you
1.30 pm: Head home

There's another set of CNS officers who work in a general shift (9.30 am to 5.30 pm). These professionals conduct preventive and corrective maintenance

The Payoff
. Junior executive (electronics): Group 'B' executive in the E-1 level with a pay scale of Rs 16,400-40,500 (3 per cent annual increment)
. Manager (electronics): Group 'A' executive in the E-3 level with a pay scale of Rs 24,900-Rs 50,500 (3 per cent annual increment)
. Senior assistant (electronics) (non-executive cadre): Group 'C' at NE-6 level with a pay scale of Rs 6300-180-8460-200-12060 (set to be revised)

Skills
. Be technology savvy
. Attention to detail
. High degrees of self-discipline and flexibility
. Ability to cope with physical and psychological stress
. Strong team player

How do i get there?
Study science (physics, chemistry and maths) at the plus-two level. To join as:
. Junior executive (electronics), you require a BE/BTech degree in electronics and telecommunication or equivalent
. Manager (electronics), you need a first class BE/BTech degree in electronics and telecommunication or equivalent with two years' experience
. Senior assistant (electronics), you need a first class three-year diploma/ degree in electronics and telecommunication/ BSc with physics/maths
. Once recruited, every new entrant has to pass a 20-week 'ab-initio course' at the Civil Aviation Training College (CATC), Allahabad. There is a continuous
process of training at CATC and regional training centres for development of competency/ proficiency at various levels for the CNS and automation facilities/
equipment. Executives also undergo factory training overseas for new/latest equipment
. AAI conducts examinations and interviews for recruitment

Institutes & urls
Miscellaneous institutes for required degrees/diplomas, including
. IIITs, multiple locations, jee.iitd.ac.in
. INITs, multiple locations, aieee.nic.in

Pros & cons
. High-tech work
. Decent pay package
. Very high levels of responsibility; there's no margin for error
. Pan-India service
. Transferable job
. May travel abroad for training, seminars etc
. CNS services run 24x7. So, work is done in shifts, including night shifts

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Soaring potential

The growth in air traffic has expanded the scope for CNS professionals...

Starting as a technical officer (at that time the entry level for communication, navigation and surveillance professionals), Praveen Seth has risen to head more than just the CNS wing of the Airports Authority of India (AAI). As member (operations) in the AAI, he oversees all operations, including air traffic control, CNS and aerodrome, in this government organisation. Excerpts from an interview:

The AAI is short of about 1,400 CNS professionals and there has been some issue in recruitment. What's the current situation?
We are in the process of filling those seats. Recruitment is a time-consuming activity. There was a gap in recruitment due to some change in the recruitment policy. Unfortunately, expansion took place in that period and added to the vacancies.

What about the other openings?
There are a certain number of people who are taken in from the open market, through direct recruitment. And there's a certain number who are promoted within the department. The process for both is on. The vacancies are across levels. This has already been taken up. Around June next year, we will take in about 500 executives through direct recruitment.
There's a gap in vacancies in the upper echelons because recruitment takes time and with the opening of new airports, addition of new facilities and systems, the expansion of services took place much faster. Recruitment has to keep pace with that and we are doing exactly that.

When I joined the department (as a technical officer) in 1973, the Indira Gandhi International Airport had only one instrument landing system (ILS). Now there are five and another one is being installed. The airport then had only one active runway. Now, it's spread over 5,000 acres, from Dwarka to Gurgaon. This growth in civil aviation is likely to continue for another few decades. So, from the career point of view, there is good potential and growth pattern.

If and when the CNS division is turned into a separate entity -- the Air Navigation Services Corp (ANSC) -- what impact do you think it will have on the human resources front?
What we have to look at is why it is needed. When work increases, we have to bifurcate responsibilities. We are at that stage in India. To meet growth challenges, we have to divide duties and responsibilities. That's been the trend the world over. The seeds have been sown (for the ANSC). If it materialises, it may be a schedule A company, like the AAI is.

What are the other job avenues (outside AAI) for CNS professionals?
You can join the International Civil Aviation Organisation (ICAO). Our people have gone to its headquarters in Montreal and its regional headquarters in Bangkok. There's also a requirement in the Middle East. Four to five of our associates had gone to Afghanistan, too.

Then, the department is going for computerisation of air traffic systems and peripheral activities in a big way. So, that sector is open. In CNS, we take care of the security apparatus, too, of which the Central Industrial Security Force is the end user. Once you have domain knowledge, you can join the manufacturers and suppliers (of CNS systems). Our associates have been taken up by manufacturers.

- *Interviewed by Rahat Bano*