

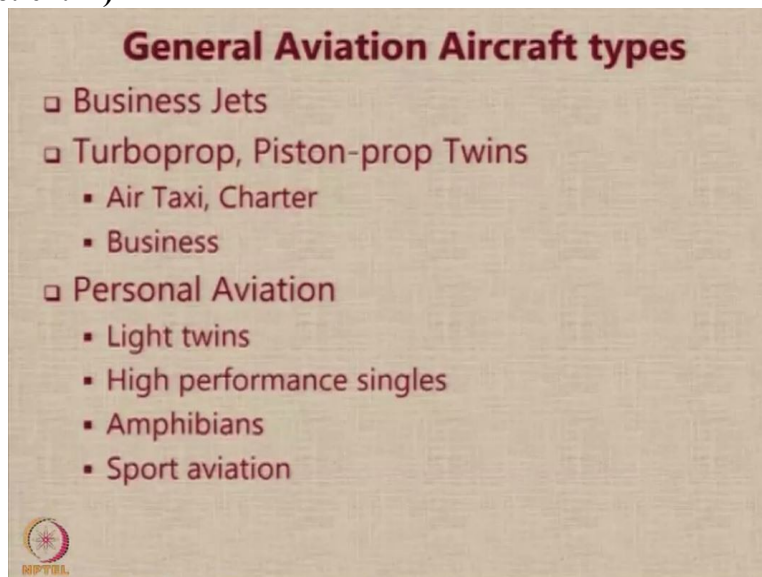
**Introduction to Aircraft Design**  
**Prof. Rajkumar S. Pant**  
**Department of Aerospace Engineering**  
**Indian Institute of Technology, Bombay**

**Lecture - 19**  
**Design Considerations - GA Aircraft**

Let us have a look at general aviation aircraft and look understand what are the key design considerations. General aviation aircraft are small aircraft which are used for general aviation. Now, the meaning of general aviation is aviation which is not for commercial purposes, but for only self-usage. So, for example, if there is an individual who has purchased an aircraft which he or she is operating for their own personal flights or even a company that is operating these aircraft to commute a few of its executives or a person taking his or her family on short joyrides.

All of these aircraft, aircraft which are used for pilot training, they all fall under the category of general aviation. Essentially you can call it as non-fare paying passenger's noncommercial aviation even within this we have a few types.

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The first type is business jets, which as the name suggests, are jet engine aircraft used for business purposes are used by businessmen and in that there could be various categories there could be Turboprop engine aircraft or Piston-prop engine aircraft, but most of them tend to be twin engine. They are either used for air taxi or a charter or for their own individual businesses.

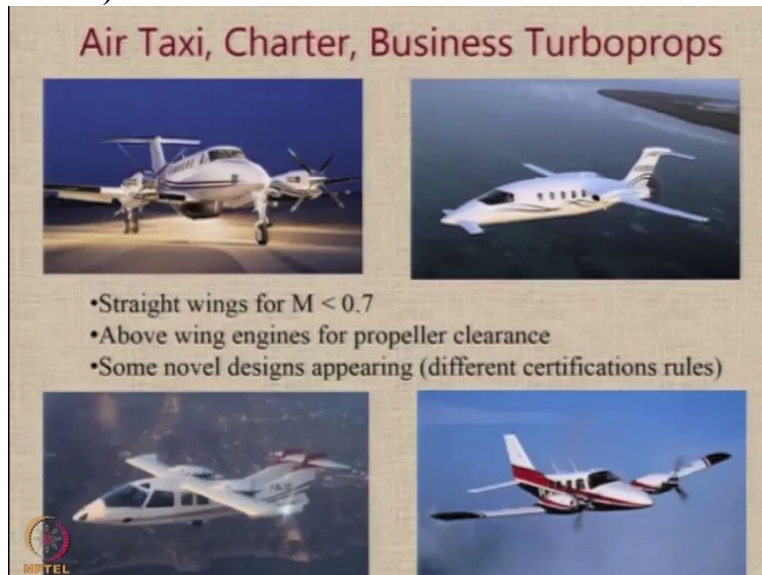
Then you have personal aviation in personal aviation falls, the usage of light twin engine aircraft, high performance single engine aircraft, amphibian aircraft or aircraft which can take off and land from sea small ones and the aircraft for sports aviation.

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In business jets, we normally see transonic speeds and because of that the designs of these aircraft look very similar like the design of the airliners, you can always consider them to be shortened versions of airliners. For example, you can see this aircraft the Gulfstream G650 is a very popular aircraft used for business aviation, you can also have citation and even Boeing has come into this particular field in the form of Boeing business jets, which are essentially shortened or shrunk versions of their regional or low small range transport aircraft.

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Then you can have aircraft for air taxi for charter or for business turboprops. Some aircraft have made a mark for themselves in this particular category, most of them would have unswept or straight wings. And here because an aircraft used by an individual or by an organization actually makes a statement about themselves. So therefore, you can see a lot of variety and a lot of new and unconventional designs.

And there are some novel designs which are appearing recently we had one aircraft called Honda jet which came in the market this is the one which has wings mounted or this is the one which has engines mounted over the wings. Finally, we have personal aviation.

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Which are used for recreation purposes or for individual purposes. In this case, some of the certification rules are relaxed, because these are not going to be used by people who are going to travel. People who are going to pay fare for commuting. Since they are used by individuals for their own personal and adventure flying. Some mission specific designs have also appeared. And this is a very interesting area of aviation where a lot of scope exists for design innovation, and for bringing in features that can enhance their usage. Thanks a lot.