

## MODULE 17A – PROPELLER

Sl. No.	Topics to be Covered		Level
			B1.1
17.1.	<b>FUNDAMENTALS</b>		2
	a.	Blade element theory;	
	b.	High/low blade angle, reverse angle, angle of attack, rotational speed;	
	c.	Propeller slip;	
	d.	Aerodynamic, centrifugal, and thrust forces;	
	e.	Torque;	
	f.	Relative airflow on blade angle of attack;	
	g.	Vibration and resonance.	
17.2.	<b>ENGINE PERFORMANCE</b>		2
	a.	Construction methods and materials used in wooden, composite and metal propellers;	
	b.	Blade station, blade face, blade shank, blade back and hub assembly;	
	c.	Fixed pitch, controllable pitch, constant speed propeller;	
	d.	Propeller/spinner installation.	
17.3.	<b>PROPELLER PITCH CONTROL</b>		2
	a.	Speed control and pitch change methods, mechanical and electrical/electronic;	
	b.	Feathering and reverse pitch;	
	c.	Overspeed protection.	
17.4.	<b>PROPELLER SYNCHRONIZING</b>		2
	a.	Synchronizing and synchrophasing equipment.	
17.5.	<b>PROPELLER ICE PROTECTION</b>		2
	a.	Fluid and electrical de-icing equipment.	
17.6.	<b>PROPELLER MAINTENANCE</b>		3
	a.	Static and dynamic balancing;	
	b.	Blade tracking;	
	c.	Assessment of blade damage, erosion, corrosion, impact damage, delamination;	
	d.	Propeller treatment/repair schemes;	
	e.	Propeller engine running.	
17.7.	<b>PROPELLER STORAGE AND PRESERVATION</b>		2
	a.	Propeller preservation and de-preservation	