# DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

P-878 Revision 25 HARTZELL HC-82X

March 6, 1981

## TYPE CERTIFICATE DATA SHEET NO. P-878

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. 878) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder Hartzell Propeller, Inc.

350 Washington Avenue Piqua, Ohio 45356

Type Constant speed; hydraulic (see Notes 3 and 4)

Engine shaft SAE #20 spline, SAE #2 flange, special flange 4" B.C.

Hub material Alloy steel
Blade material See below
Number of blades Two

Hubs eligible HC-82XF-1, -2, -3, -6; HC-82XG-1, -2, -6; HC-82XL-1, -2, -6; HC-82X20-1, -3,

-5; HC-82-XK-1, -2, -3; HC-82XS-2 (see Notes 1, 3, and 4, and "Blades Eligible.")

						*Approx. Max. Wt.			
Blades						Complete with Grease,			
Eligible	Continuous		Takeoff		Diameter	Mounting Bolts, etc.			
(see Note 2)	HP	RPM	HP	RPM	Limits	(see notes 3 and 7)	Blade Construction		
	Hub Models HC-82XF-1, -2, -3, -6; HC-82X20-1, -2, -3, -5; HC-82XK-1, -2, -3								
7636C-0		nub Mo	Jueis nc	-02AΓ-1 <u>,</u>	<u>-2, -3, -0; пС-82.</u> I	<u>X20-1, -2, -3, -3; HC-82XN</u>	<u>-1, -2, -3</u>		
	225	2000	225	2000	76" 60"	C 4 11	A1 ' 11		
to	225	3000	225	3000	76" - 68"	64 lbs.	Aluminum alloy		
7636C-8					(-0 to -8)				
7636D-0									
to	225	3000	225	3000	76" - 60"	64 lbs.	Aluminum alloy		
7636D-8					(-0 to 8)				
8046-6							Special fabric base plastic;		
to	150	2700	150	2700	74" - 66"	58 lbs.	stainless steel or brass tipping.		
8046-14					(-6 to -14)				
8427+2							Special fabric base plastic;		
to	215	2600	215	2600	86" - 80"	64 lbs.	stainless steel or brass tipping		
8427-4					(+2 to -4)		** 0		
8428+2							Special fabric base plastic;		
to	250	2600	250	2600	86" - 75"	64 lbs.	stainless steel or brass tipping		
8428-9					(+2 to -9)		11 2		
8428X-0	215	2600	215	2600	,		Special fabric base plastic;		
to	or				84" - 75"	64 lbs.	stainless steel or brass tipping		
8428X-9	240	1920	260	2180	(-0 to -9)		II 8		
8433-0					(				
to	260	2625	260	2625	84" - 74"	67 lbs.	Aluminum alloy		
8433-10				2020	(-0 to -10)	0, 100.			
8433S-0					( = == ==)				
to	260	2625	260	2625	84" - 74"	67 lbs.	Aluminum alloy		
8433S-10					(-0 to -10)	4			

Page No.	1	2	3	4	5	6
Rev. No.	25	24	25	24	24	24

P-878 2

Blades	Maximum					*Approx. Max. Wt. Complete with Grease,		
Eligible		tinuous		keoff	Diameter	Mounting Bolts, etc.		
(see Note 2)	HP	RPM	HP HC 923	RPM	Limits	(see notes 3 and 7) 1, -2, -3, -5; HC-82XK-1, -1	Blade Construction 2, -3 (cont'd)	
8833-0	<u>.</u>	Tub Models	ПС-627	$\Gamma$ -1, - $Z$ ,	5, -0, HC-82A2U-	1, -2, -3, -3, TC-62AK-1, -	<u>2, -3</u> (cont d)	
to 8833-10	240	2600	240	2600	88" - 78" (-0 to -10)	68 lbs.	Aluminum alloy	
9333C-0 to 9333C-5	260	2330	280	2330	93" - 88" (-0 to -5)	72 lbs.	Aluminum alloy	
10133D-0 to 10133D-6	260	2180	260	2180	101" - 95" (-0 to -6)	77 lbs.	Aluminum alloy	
10133D-3 to 10133D-6	280	2180	280	2180	98" - 95" (-3 to -6)	77 lbs.	Aluminumm alloy	
			Hı	ıb Models	HC-82XG-1, -2,	-6; HC-82XL-1, -2, -6		
7636C-0 to 7636C-8	180	2700	180	2700	76" - 68" (-0 to -8)	64 lbs.	Aluminum alloy	
7636D-0 to 7636D-8	180	2700	180	2700	76" - 68" (-0 to -8)	64 lbs.	Aluminum alloy	
8046-6 to 8046-14	150	2700	150	2700	74" - 66" (-6 to -14)	58 lbs.	Special fabric base plastic; stainless steel or brass tipping.	
8427+2 to 8427-4					86" - 80" (+2 to -4)	64 lbs.	Special fabric base plastic; stainless steel or brass tipping.	
8428+2 to 8428-9	180	2600	180	2600	86" - 75" (+2 to -9)	64 lbs.	Special fabric base plastic; stainless steel or brass tipping.	
8428X-0 to 8428X-9	180	2600	180	2600	84" - 75" (-0 to -9)	64 lbs.	Special fabric base plastic; stainless steel or brass tipping.	
8433-0 to 8433-6	180	2600	180	2600	84" - 78" (-0 to -6)	67 lbs.	Aluminum alloy	
8433-8 to 8433-14	180	2700	180	2700	76" - 70" (-8 to -14)	67 lbs.	Aluminum alloy	
8433-0 to 8433S-6	180	2600	180	2600	84" - 78" (-0 to -6)	67 lbs.	Aluminum alloy	
8433S-8 to 8433S-14	180	2700	180	2700	76" - 70" (-8 to -14)	67 lbs.	Aluminum alloy	
8833-0 to 8833-10	180	2600	180	2600	88" - 78" (-0 to -10)	68 lbs.	Aluminum alloy	
9333C-0 to 9333C-5	180	2330	180	2330	93" - 88" (-0 to -5)	72 lbs.	Aluminum alloy	
10133D-0 to 10133D-6	180	2180	180	2180	101" - 95" (-0 to -6)	77 lbs.	Aluminum alloy	

3 P-878

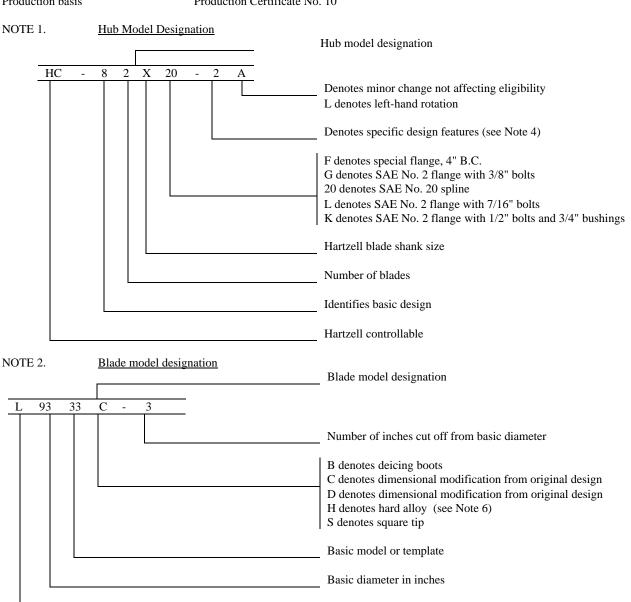
Blades Eligible		ximum tinuous	Tal	keoff	Diameter	*Approx. Max. Wt. Complete with Grease, Mounting Bolts, etc.		
(see Note 2)	HP	RPM	HP	RPM	Limits	(see notes 3 and 7)	Blade Construction	
Hub Model HC-82XS-2								
8046-8	150	2700	150	2700	72" - 66"	58 lbs.	Special fabric case plastic; stainless steel or brass tipping.	

<sup>\*</sup>Weights apply to HC-82XF, K, G, L -2 hub models. Subtract 4 lbs. for -1 hub, 2 lbs. for -3 hubs, and 9 lbs. for -6 hubs. For HC-82X20: Subtract 5 lbs. for -1 hubs, 1 lb. for -2 hubs. Add 2 lbs. for -3 hubs, and 4 lbs. for -5 hubs.

Certification basis CAR 14 effective March 5, 1952, as amended by 14-1 and 14-2

Type Certificate No. 878 issued October 8, 1952. Date of application for Type Certificate April 14, 1952.

Production basis Production Certificate No. 10



Denotes left-hand blade

P-878 4

NOTE 3. <u>Pitch Control</u>. Eligible with the following governors:

 $\begin{array}{ll} \text{Hartzell Models B-(x)-(x); D-(x)-(x); F-(x)-(x)} & \text{Weight 4.5 lbs.} \\ \text{Hoof Model 1-000-007 series} & \text{Weight 3.5 lbs.} \end{array}$ 

Woodward Model x210xxx or x210x-xxx

Hamilton Standard Models 1A4, 1M12, 1P12 and 1Q12 Weight 4.5 lbs.

The Hartzell B-0 is the only model which is interchangeable with the Hamilton Standard 1M12 or 1Q12. Other Hartzell models are not interchangeable with any Hamilton Standard model without modification of the latter. On all models except the -6, oil pressure is used to change the pitch of the blades from high to low pitch. The action is reversed in the -6 model, which has no blade counterweights.

NOTE 4. (a) Feathering. The -2 models incorporate feathering and unfeathering features.

The -1, -3, and -6 models do not feather.

(b) <u>Reversing</u>. The -5 model incorporates reversing but not feathering.

NOTE 5. <u>Left-Hand Models</u>. The left-hand version of an approved model propeller is eligible at the same rating and diameter as listed for the right-hand model. See Notes 1 and 2.

#### NOTE 6. <u>Interchangeability.</u>

- (a) Blades.
  - (1) Hard alloy blades eligible only on seaplanes and amphibious aircraft.
  - (2) 8433A blades are interchangeable with 8433 blades providing all blades in the same propeller are identical.
- (b) Propellers. Only propellers listed on this data sheet may be replaced by corresponding propellers listed in TC Data Sheet P23GL and P24GL and Type Certificate Data Sheet P-908, provided model designations are the same except that the identifying base design digit "8" (see Note 1) may be replaced by the letter "A" and/or "X" replaced by "V".

#### NOTE 7. <u>Accessories</u>.

- (a) Propeller Anti-icing
  - Eligible with fluid feed shoes or Icex boots installed in accordance with Hartzell Special Instructions No. 59.
  - (2) Eligible with Hartzell fluid feed equipment on propeller models for which the equipment is available.
  - (3) Eligible with Cessna 0850305 slinger ring installed only on Cessna spinner (see item (b)(2) below).
- (b) Propeller Deicing
  - (1) Eligible with Goodrich Electrical Propeller Deicer when installed according to instruction given in Goodrich Report 59-728.
  - (2) Eligible with Goodyear Electrical Propeller Deicer when installed according to instruction given in Goodyear Report No. 147 dated October 23, 1961.
- (c) Propeller Spinner
  - (1) Eligible with Hartzell spinners (weight of spinner extra).
  - (2) Eligible with Cessna spinner dome 0752006 and bulkhead 0850300.

## NOTE 8. Not applicable.

5 P-878

NOTE 9. <u>Table of Propeller-Engine Combinations</u>

Approved Vibrationwise for Use on Normal Category Single-Engine Tractor Aircraft

The maximum and minimum propeller diameters that can be used from a vibration standpoint are shown below. No reduction below the minimum diameter listed is permissible, since this figure includes the diameter reduction allowable for repair purposes.

Blade		Max. Dia.	Min. Dia.	
Model	Engine Model	(Inches)	(Inches)	Placards
7636C	Lycoming O-290-D2A	74	72	Never exceed 2750 rpm
	Lycoming O-320	76	72	None
7636D	Lycoming O-290-D2A	76	72	None
	Lycoming O-320	76	70	None
	Lycoming O-320-B1A	72	70	None
	Lycoming O-340	76	72	None
8433	Continental O-470-A	84	82	None
	Continental O-470-B	84	80	None
	Continental O-470-H	84	81	None
	Continental O-470-J	84	82	None
	Continental O-470-K	84	78	None
	Continental O-470-L	84	78	None
	Continental O-470-M	84	80	None
	Continental IO-470-C	84	80	None
	Continental IO-470-D	80	78	None
	Lycoming O-320	72	70	None
	Lycoming O-340	72	70	None
	Lycoming O-340-A1A	72	70	None
	Lycoming O-540-A1A	77	76	Avoid continuous operation
				beteen 2225 and 2275 rpm
	Lycoming O-540-A1A	82	80	None
	Lycoming O-540-A1A5, -A1B5	77	73	None
	Lycoming O-540-A2B	82	80	None
	Lycoming O-540-B1A5	77	73	None
0022	Lycoming O-540-B1B5	77	73	None
8833	Continental O-470-A	88	86	None
	Continental O-470-E	88	86	None
	Coontinental O-470-J	88	86	None
	Continental O-470-K Continental O-470-L	88 88	86 86	None None
		88	86	Avoid cont. eng. operation
	Lycoming O-640-A1A5			between 1950 and 2200 rpm
9333C	Lycoming GO-435-C2B, -C2B1	93	91	Avoid cont. eng. operation between 1675 and 2160 rpm, between 2900 and 3200 rpm
	Lycoming GO-435-C2B, -C2B1	90	88	None
	Lycoming GO-435-D1	91	89	Avoid cont. eng. operation
	Lyconning GO-433-D1	71	67	between 1675 and 2160 rpm,
				between 2900 and 3200 rpm
	Lycoming GO-435-D1	90	88	None
	Lycoming GO-480-B1A	90	88	None
	Lycoming GO-480-A1A	90	88	None
	Lycoming GO-430-B, -B1C	90	88	None
	Continental GO-300-A	90	90	None
10133D	Lycoming GO-435-C2B, -C2B1	101	95	Avoid cont. eng. operation
101000		101		between 2600 and 2975 rpm
	Lycoming GO-480-B1A6	98	92	None
	Lycoming GO-435-C2B2-6	101	95	None
	Lycoming GO-435-C2B-6	101	85	None

P-878 6

# Note 10. Special Note

Special Note.

The word "eligible" as used herein does not signify approval as part of this type certificate. "Eligible" accessories and governors must be approved as part of the aircraft type certificate upon compliance with the applicable aircraft airworthiness requirements.

....END....