

Honda Aircraft Company

HA-420 AFM

LIMITATIONS

TAKEOFF AND LANDING

Takeoff Flap Settings UP, TO/APPR
Landing Flap Setting LDG
Landing Flap Setting (with ice accumulated on airframe) TO/APPR
Runway Surface..... Smooth, Hard, and Paved Only
Runway Slope..... $\pm 2\%$
Airfield Pressure Altitude..... -1,000 to 10,000 ft.
Ambient Temperature..... -40 °C to ISA+40 °C at sea level

NOTE

For more information on ambient temperature, refer to Figure 2-2. Ambient Temperature Operating Limits.

Tailwind..... 10 knots
Crosswind..... 20 knots
Turnaround Time..... Refer to Section 5, Performance

ENROUTE

Maximum Pressure Altitude..... 43,000 ft
Maximum Altitude for landing gear extension..... 18,000 ft
Maximum Altitude for flap extension

- TO/APPR..... 18,000 ft
- LDG 18,000 ft

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NORMAL

CROSSWIND TAKEOFF PROCEDURE

The crosswind technique for takeoff requires that the pilot hold aileron into the wind to maintain wings level. Maintain nosewheel contact with the runway throughout the takeoff roll. Do not over control in aileron since it can result in heading deviations due to induced lift differences between the upwind and downwind wing. Rudder pedals must be used to maintain directional control.

The directional authority available through the rudder pedals is a function of groundspeed, airspeed, runway condition (wet, icy, etc.) and the magnitude of the crosswind.

CROSSWIND LANDING PROCEDURE

WARNING

The bank angle must be limited to 10 degrees in order to ensure wingtip clearance from the runway surface.

CAUTION

Not following the procedures provided in this section may result in large centerline deviations.

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CROSSWIND LANDING PROCEDURE (continued)

The final approach phase of the crosswind landing should be flown wings-level, utilizing a crab angle into the wind sufficient to stabilize the aircraft path along the extended runway center line.

WARNING

For landings with a crosswind greater than 15 knots, the approach must be made using a crab technique. A landing in these conditions using a wing low method could result in a wingtip strike.

Avoid excessive airspeed during the final approach. Similar to a performance landing, minimum flare should be used. An extended flare will make drift correction more difficult and will increase pilot workload.

Just prior to touchdown, perform the de-crab maneuver by applying rudder to align the aircraft fuselage with the runway. Simultaneously apply aileron into the wind to minimize drift. Attempt to completely align the aircraft with the center line prior to touchdown. If drift cannot be controlled, a go-around should be performed.

Touch down with the upwind landing gear first, then set the other main wheel on the runway without delay followed by a prompt de-rotation.

Upwind aileron should be applied immediately after touchdown to ensure the upwind landing gear remains firmly in contact with the surface. Directional control should be maintained by applying rudder to track the center line. Apply slight forward pressure on the yoke to ensure nosewheel contact with the runway. Symmetrical braking and speedbrake (if installed) should be applied as required to decelerate.

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CROSSWIND LANDING PROCEDURE (continued)

NOTE

Lateral control during the ground roll has been shown to be relatively ineffective in countering wing rocking motions, which may occur after touchdown of one main gear prior to the opposite main gear. Use steady, upwind aileron input to maintain main gear firmly in contact with the ground rather than attempting a counter rocking motion.

NOTE

Approximately 2 seconds after nosewheel has registered weight-on-wheels, the nosewheel steering becomes active, and the steering will then move to the position being commanded by the rudder pedals. This transition may introduce a yawing response, which should be promptly countered using rudder inputs.

NOTE

Rudder and nosewheel steering are significantly more effective in maintaining directional control than differential braking. In addition, the amount of available differential braking may be reduced if anti-skid is active.

NOTE

The contribution to directional stability from the main wheels is reduced with increased braking. If directional control is in question, release the brakes and apply rudder as required to correct. Once directional control has been re-established, apply symmetrical braking.

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PERFORMANCE

Uncorrected Landing Field Length [feet] - Dry Runway, Zero Slope, No Wind, Flaps LDG, Ice Protection Off																										
ALT [FT]	WT [LB]	Vref [KIAS]	TEMPERATURE [°C]											ALT [FT]	WT [LB]	Vref [KIAS]	TEMPERATURE [°C]									
			-40	10	15	20	25	30	35	40	45	50	55				-40	10	15	20	25	30	35	40	45	
-1000	7500	100	2541	2874	2908	2941	2975	3009	3043	3077	3110	3144	3177	5000	7500	100	2933	3342	3384	3425	3465	3506	3546	3586	3626	
	8000	102	2602	2947	2981	3016	3051	3085	3120	3155	3190	3224	3258		8000	102	3008	3430	3472	3515	3557	3598	3640	3681	3722	
	8500	105	2703	3064	3101	3137	3173	3210	3246	3283	3319	3355	3390		8500	105	3127	3570	3614	3658	3702	3746	3790	3833	3876	
	9000	108	2802	3181	3219	3256	3294	3332	3371	3409	3446	3484	3521		9000	108	3245	3708	3754	3800	3846	3892	3938	3983	4028	
	9500	111	2900	3296	3335	3375	3414	3454	3494	3533	3573	3612	3651		9500	111	3362	3845	3893	3941	3989	4036	4084	4131	4178	
	9960	114	2989	3400	3441	3482	3523	3564	3606	3647	3688	3728	3769		9960	114	3468	3969	4019	4069	4119	4168	4218	4266	4315	
	10700	118	3131	3567	3610	3654	3697	3740	3784	3827	3871	3914	3956		10700	118	3637	4168	4220	4273	4326	4378	4430	4482	4533	
Sea Level	7500	100	2598	2944	2978	3013	3048	3083	3118	3153	3187	3222	3256	6000	7500	100	3010	3433	3476	3518	3560	3602	3643	3685		
	8000	102	2662	3019	3054	3090	3126	3162	3198	3234	3269	3305	3340		8000	102	3087	3524	3568	3611	3654	3698	3740	3783		
	8500	105	2765	3140	3177	3214	3252	3290	3327	3365	3402	3439	3476		8500	105	3210	3668	3714	3759	3804	3850	3894	3939		
	9000	108	2867	3259	3298	3337	3377	3416	3455	3495	3534	3572	3611		9000	108	3332	3810	3858	3905	3953	4000	4047	4093		
	9500	111	2968	3378	3418	3459	3500	3541	3582	3623	3663	3704	3744		9500	111	3452	3951	4001	4050	4100	4149	4198	4247		
	9960	114	3060	3485	3528	3570	3612	3655	3697	3740	3782	3823	3865		9960	114	3561	4080	4131	4182	4234	4285	4336	4386		
1000	10700	118	3205	3657	3701	3746	3791	3836	3881	3926	3970	4014	4058	10700	118	3735	4284	4339	4393	4447	4501	4555	4608			
	7500	100	2658	3016	3052	3088	3124	3160	3196	3232	3267	3302	7000	7500	100	3089	3528	3572	3615	3659	3702	3745	3787			
	8000	102	2724	3093	3130	3167	3204	3241	3278	3315	3352	3388		8000	102	3169	3622	3667	3711	3756	3801	3845	3889			
	8500	105	2830	3218	3256	3295	3334	3373	3411	3450	3488	3526		8500	105	3296	3770	3817	3864	3911	3958	4004	4050			
	9000	108	2935	3341	3381	3422	3462	3503	3543	3583	3624	3663		9000	108	3421	3917	3966	4015	4064	4113	4161	4209			
	9500	111	3039	3462	3504	3547	3589	3631	3673	3715	3757	3799		9500	111	3545	4062	4113	4164	4216	4266	4317	4367			
	9960	114	3134	3573	3617	3661	3705	3748	3792	3836	3879	3922		9960	114	3658	4194	4248	4301	4354	4407	4459	4511			
10700	118	3284	3750	3796	3842	3889	3935	3981	4027	4073	4118	10700	118	3837	4405	4462	4518	4574	4630	4685	4740					
2000	7500	100	2723	3093	3130	3167	3204	3241	3278	3315	3352	3388	8000	7500	100	3171	3626	3671	3716	3761	3805	3850				
	8000	102	2791	3172	3211	3249	3287	3325	3364	3402	3439	3477		8000	102	3254	3723	3769	3816	3862	3908	3953				
	8500	105	2900	3300	3340	3381	3421	3461	3501	3540	3580	3619		8500	105	3385	3876	3924	3973	4021	4070	4117				
	9000	108	3008	3427	3469	3511	3553	3594	3636	3678	3719	3760		9000	108	3514	4027	4078	4129	4179	4230	4280				
	9500	111	3115	3552	3596	3640	3683	3727	3770	3813	3856	3899		9500	111	3642	4177	4230	4283	4336	4388	4440				
	9960	114	3212	3666	3712	3757	3802	3847	3892	3937	3982	4026		9960	114	3758	4314	4369	4423	4478	4533	4587				
	10700	118	3367	3848	3896	3944	3991	4039	4087	4134	4181	4228		10700	118	3943	4531	4589	4647	4705	4763	4820				
3000	7500	100	2790	3172	3211	3249	3287	3326	3364	3402	3440	9000	7500	100	3257	3727	3774	3821	3867	3913	3959					
	8000	102	2860	3255	3294	3334	3373	3413	3452	3491	3530		8000	102	3343	3828	3876	3924	3971	4019	4066					
	8500	105	2973	3386	3428	3469	3510	3552	3593	3634	3674		8500	105	3478	3986	4036	4086	4136	4186	4235					
	9000	108	3084	3517	3560	3603	3646	3689	3732	3775	3817		9000	108	3611	4142	4194	4247	4299	4351	4402					
	9500	111	3194	3645	3691	3736	3781	3826	3870	3915	3959		9500	111	3743	4296	4351	4406	4460	4514	4568					
	9960	114	3294	3763	3810	3856	3903	3950	3996	4042	4088		9960	114	3863	4437	4494	4551	4607	4664	4719					
4000	10700	118	3453	3950	3999	4049	4098	4147	4196	4245	4294	10700	118	4054	4662	4722	4782	4842	4901	4960						
	7500	100	2860	3255	3295	3334	3374	3414	3453	3492	3530	10000	7500	100	3346	3833	3881	3929	3977	4024		4072				
	8000	102	2933	3340	3381	3422	3462	3503	3543	3584	3623		8000	102	3435	3937	3986	4036	4085	4134		4183				
	8500	105	3048	3475	3518	3561	3604	3646	3689	3731	3772		8500	105	3574	4100	4152	4203	4255	4306		4357				
	9000	108	3163	3610	3654	3699	3743	3788	3832	3876	3919		9000	108	3711	4261	4315	4369	4423	4477		4530				
	9500	111	3276	3742	3789	3835	3882	3928	3974	4020	4065		9500	111	3847	4420	4477	4533	4590	4645		4701				
	9960	114	3379	3863	3911	3960	4008	4056	4104	4151	4198		9960	114	3971	4566	4625	4683	4742	4800		4857				
10700	118	3543	4056	4107	4158	4209	4259	4310	4360	4410	10700	118	4168	4798	4860	4922	4984	5045	5106							

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