[1.1.3] K.R.X Kerbal Rotor Expansion 0.31.1

By Eskandare, June 30, 2016 in Add-on Releases

mod · helicopter · engine

Eskandare
Eskandare Heavy Industries
Members
1,102
1,314 posts
Location: Sitting in my chair.

Posted June 30, 2016 (edited)

K.R.X
Kerbal Rotor Expansion

Need More Rotors?

Apart from Firespitter and KAX, I felt there wasn't enough rotarywing parts. This mod is my attempt to answer that.

Introducing K.R.X. (Kerbal Rotor Expansion).

DOWNLOAD

From

SpaceDock!

Videos:

Reveal hidden contents

Included in this release:

- Heron: coaxial rotor
- Sparrow: 3 blade rotor (left and right rotating versions)
- Osprey: 3 blade tilt-rotor style (left and right rotating versions)
- Seagull: 6 blade super heavy rotor
- Tail Rotors: 3 Blade, 6 Blade, and Fenestron

Issues:

- Some tuning and balancing is still needed.
- Co-axial rotor (Heron) has a problem with one of the rotor switch/prop-blur, a limitation of firespitter. I'm working on a fix.

Recommended Mods:

- **Throttle Controlled Avionics**: For single rotor use 'unbalanced thrust' on the main rotor and 'manual' on the tail rotor. For intermeshing, tandom, or quad, etc. configurations, use 'thrust'.

Change Log:

```
Version 0.31.1 Minor Update

-Fixed Crash Tolerance on Fenestron
tail rotor
-Fixed Spelling Error on Osprey
rotors
-Increased torque compansation in
Osprey rotors


Version 0.31:

-Added Fenestron tail rotor
-Corrected the direction of the
Osprey rotors
-Increased the thrust of the Osprey
rotors
```

Additional Credit:

- Snjo and RoverDude: for FireSpitter (*.dll Packaged with K.R.X.)
- Keptin: The sounds were made by Keptin (tweaked by me) and for much of the inspiration of this mod.

Edited August 11, 2016 by Eskandare

Update

+ Quote

You, JeffreyCor, EpicSpaceTroll139 and 42 others like this

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Helping with KerbinSide - New Bases For Planet Kerbin

Deimos Rast

Senior Rocket Scientist

Members

555

Posted June 30, 2016

Report post

mighty fine looking; any tails or just mains?

+ Quote

1,380 posts

DownHereInChile

Fighter Designer

Members

20

81 posts

Posted June 30, 2016

Report post

Awesome! Do they work well with FAR, or do they end up being overpowered?

+ Quote

Check your staging

Beetlecat

Sr. Spacecraft Engineer

Members

574

1,613 posts

Posted June 30, 2016

Report post

Outstanding!

Thank you.

+ Quote

Onward!

Qwarkk

The Clock is Running

Members

47

131 posts

Posted June 30, 2016

Report post

Nice work, this looks awesome. Time to manually recover pods!

+ Quote

Eskandare

Eskandare Heavy Industries

Posted June 30, 2016 (edited)

Report post

Members
1,102
1,314 posts
Location: Sitting in my chair.

> **On 6/30/2016 at 6:34 PM, Deimos Rast said:**
>
> mighty fine looking; any tails or just mains?

I'm currently making tail rotors in 6 blade and 3 blade, and also a 4 blade rotor and tail.

> **On 6/30/2016 at 7:11 PM, DownHereInChile said:**
>
> Awesome! Do they work well with FAR, or do they end up being overpowered?

May be overpowered, I don't know yet. I'm planning a FAR patch in the future.

Edited July 1, 2016 by Eskandare

+ Quote

DownHereInChile likes this

Eskandare Heavy Industries
- Check out my mods

Helping with KerbinSide - New Bases For Planet Kerbin

martinezfg11
Kerbal Atmosphere Program

Members
317
470 posts

Posted July 1, 2016

Report post

You beat me to it. This is exactly the type of project I've been wanting to tackle.

+ Quote

AoA Tech - Aviation Parts | IVA Everything

MY CRAFT ON KERBALX

Atatra

Constantly Tired

Members

12

64 posts

Posted July 1, 2016

Report post

this looks incredible, made me so excited when it popped up on spacedock, need to get this installed as soon as possible!

do the osprey rotors have any kind of tilt function currently or planned, or are you recommending we use infernal robotics with them?

\+ Quote

Eskandare

Eskandare Heavy Industries

Members

1,102

1,314 posts

Location: Sitting in my chair.

Posted July 1, 2016

Report post

> **On 7/1/2016 at 4:12 AM, Atatra said:**
>
> this looks incredible, made me so excited when it popped up on spacedock, need to get this installed as soon as possible!
>
> do the osprey rotors have any kind of tilt function currently or planned, or are you recommending we use infernal robotics with them?

I recommend Infernal Robotics, the engine is just the stack engine part, intakes and nacelle sold separately. : D

\+ Quote

Eskandare Heavy Industries

\- Check out my mods

Helping with KerbinSide - New Bases For Planet Kerbin

evileye.x

Dreaming of Space

Posted July 1, 2016

Report post

So no tilting/gimballing for pitch/yaw control? We have to rely on reaction wheel for that?

Members
210
448 posts

+ Quote

The best KSP videos. Ever.

Eskandare

Eskandare Heavy Industries

Members
1,102
1,314 posts
Location: Sitting in my chair.

Posted July 1, 2016

Report post

> **On 7/1/2016 at 8:55 AM, evileye.x said:**
>
> So no tilting/gimballing for pitch/yaw control? We have to rely on reaction wheel for that?

I was going to put a gimbal in but wasn't sure on the behavior, I'll probably add that next update, and the rotor has a reaction wheel representing the nature of a rotor's gyroscopic rigidity in space.

+ Quote

Eskandare Heavy Industries
- Check out my mods

Helping with KerbinSide - New Bases For Planet Kerbin

StevieC

Resident Slacker

Members
183
649 posts
Location: 42° 56' N, 85° 38' W

Posted July 1, 2016 (edited)

Report post

are these rotors hingeless, or articulated? (articulated rotors have hinges to let each blade swing up and down which makes it unsafe to perform zero-G aerobatics if the rotor is articulated)

Edited July 1, 2016 by StevieC

+ Quote

"How hard can it be?!" - Jeremy Clarkson

"That's not gone well!" - also Jeremy Clarkson, about ten minutes later

martinezfg11

Kerbal Atmosphere Program

●●●

Members

317

470 posts

Posted July 1, 2016

Report post

> **On 7/1/2016 at 1:22 PM, Eskandare said:**
>
> I was going to put a gimbal in but wasn't sure on the behavior, I'll probably add that next update, and the rotor has a reaction wheel representing the nature of a rotor's gyroscopic rigidity in space.

I'm not sure if gimbaling would produce accurate rotor behaviour, I would think that the thrust vector should move along the rotor disk depending on "cyclic" input. Then again this may not be possible without a custom plugin. I'm not sure how firespitter makes rotors behave, because I know that cyclic position is shown in rotors.

+ Quote

[AoA Tech - Aviation Parts](#) | [IVA Everything](#)

Eskandare

Eskandare Heavy Industries

●●●●

Members

1,102

1,314 posts

Location: Sitting in my chair.

Posted July 1, 2016

Report post

Well... because it is KSP, they'll behave like rigid rotor masts, as apposed to the articulated rotor mast.

> **On 7/1/2016 at 1:33 PM, martinezfg11 said:**
>
> I'm not sure if gimbaling would produce accurate rotor behaviour, I would think that the thrust vector should move along the rotor disk depending on "cyclic" input. Then again this may not be possible

> without a custom plugin. I'm not sure how firespitter makes rotors behave, because I know that cyclic position is shown in rotors.

Some components of firespitter are "broken" so unfortunenly that won't be happening soon. I figure putting a 2 to 4 degree gimbal will be as close as we can get right now.

+ Quote

Eskandare Heavy Industries - Check out my mods

Helping with KerbinSide - New Bases For Planet Kerbin

Kottabos

Rocketeer

Members

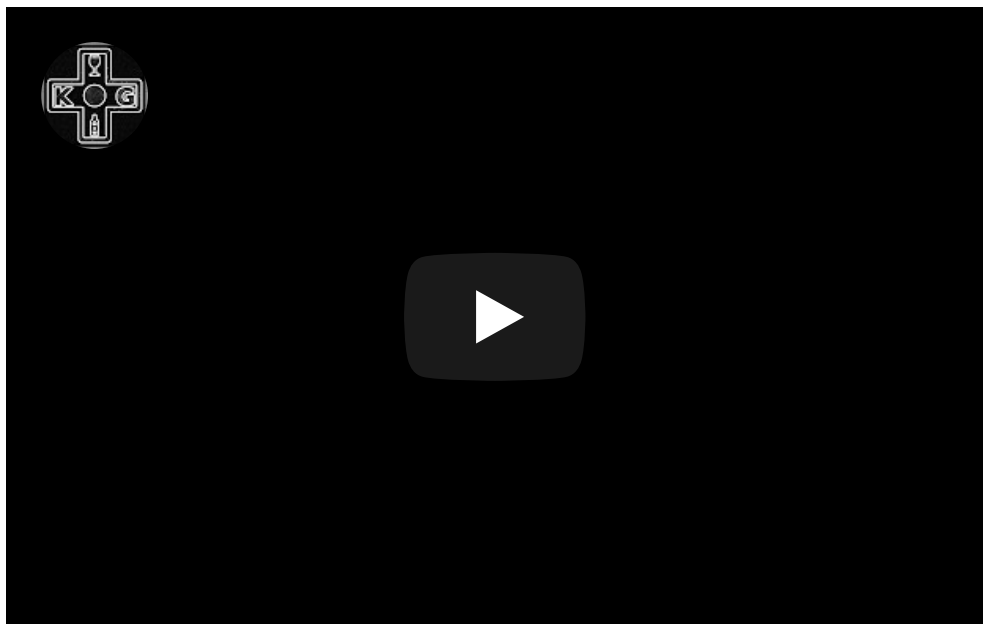
69

53 posts

Posted July 1, 2016

Report post

Just posted a spotlight of this mod on my channel, and I gotta say I really love the work you've done here. great models, animation, sound design and on top of all that I can actually fly with these parts unlike other helicopter parts I've tried lol. I can't wait to see how this mod moves forward.



+ Quote

ThiccRocketScientist, Pappystein, colmo and 4 others like this

My Youtube Channel:
http://www.youtube.com/KottabosGames

StevieC
Resident Slacker
●●●●

Members
183
649 posts
Location: 42° 56' N, 85° 38' W

Posted July 1, 2016

Report post

> **On 7/1/2016 at 1:33 PM, Eskandare said:**
>
> Well... because it is KSP, they'll behave like rigid rotor masts, as apposed to the articulated rotor mast.

Good. I actually prefer rigid-rotors (even though calling them 'rigid' is a misnomer, they're properly called hingeless, since they rely on allowing the blades themselves to flex in order to serve the same function that the led/lag and flapping hinges fulfill on an articulated rotor-head) because they allow a rotorcraft to reach higher airspeeds and are more responsive to control-inputs.

+ Quote

"How hard can it be?!" - Jeremy Clarkson

"That's not gone well!" - also Jeremy Clarkson, about ten minutes later

drhay53
Bottle Rocketeer
●●●

Members
204
402 posts

Posted July 1, 2016

Report post

awesome! always wanted more rotors in KAX.

+ Quote

BigNose

Sr. Spacecraft Engineer

Members

122

361 posts

Posted July 1, 2016

Report post

Ohhh interesting, going to follow this for sure!

Quote

Lemons are love, lemons are life.

theonegalen

Senior IVA Designer

Members

871

1,499 posts

Location: Houston area

Posted July 1, 2016 (edited)

Report post

Oh *this* is what you've been working on!

Between AirplanePlus and this mod, the venerable KAX and her NRE spam may not be needed at all anymore.

Edited July 1, 2016 by theonegalen

Quote

Musician, Teacher, Science Enthusiast, Nerd, Christian

Working on custom ASET IVAs for stock and mod cockpits:
Warbird Cockpits!
Current WIP: Stock Mk1Inline (F-15A), Mk2Inline (Blackbird/Retro), and Mk1Pod (Mercury) cockpit,

maranble14

Rocketry Enthusiast

Members

18

64 posts

Posted July 1, 2016

Report post

Now we just need an implementation to allow crafts to hover.

Quote

SpaceBadger007 likes this

Location: Jacksonville, FL

Geschosskopf

Director of Shanghaiing Operations

Members

5,903

6,885 posts

Location: Lousy Anna's armpit

Posted July 1, 2016

Report post

Oh cool. I'll have to give these a try with Throttle-Controlled Avionics (which is the only way I can fly helicopters)

+ Quote

-Geschosskopf -- NIHIL INIQVIVS QVAM ÆQVITATEM NIMIS INTENDERE

I am a Kerbero

Tutorial on Flotillas --- Paydirt! A Tutorial on Finding the Best

AdmiralTigerclaw

Sr. Spacecraft Engineer

Members

261

740 posts

Posted July 1, 2016

Report post

@Eskandare

Have you taken a look at the 'experimental' tweakable rotors that come with Firespitter at all?

I've been considering using them as a base template to create a rotor mod of my own centered around rotors powered by separate turbine engines instead of building the 'engine' into them.

What makes it more interesting is that the rotors utilize some kind of alternate 'power' production and consumption module that actually affects their RPMs. If I can split that out and make turbines, it would make helicopters more interesting to build.

+ Quote

StevieC

Resident Slacker

Members

183

649 posts

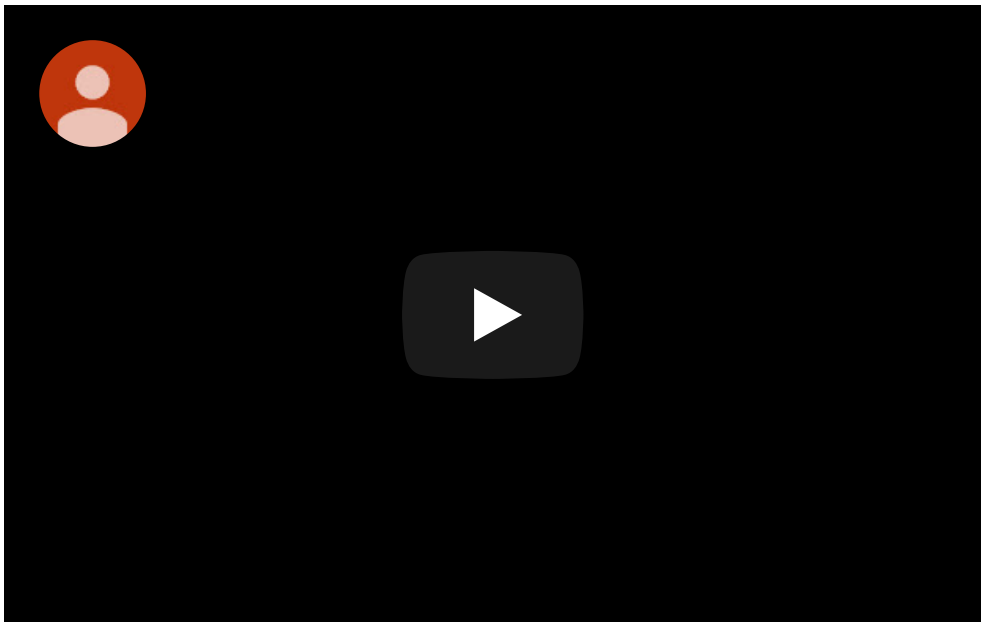
Location: 42° 56' N, 85° 38' W

Posted July 2, 2016 (edited)

Report post

Surprised nobody is challenging/disputing my claim that hingeless rotors are superior to articulated, as making that claim on other fora has sometimes accidentally triggered flame-wars.

Here's part of why I assert that hingeless rotors are superior.



Edited July 2, 2016 by StevieC

Quote

Raptor9 likes this

"How hard can it be?!" - Jeremy Clarkson

"That's not gone well!" - also Jeremy Clarkson, about ten minutes later

colmo

Modder's muse

Members

140

Posted July 2, 2016

Report post

> **On 7/1/2016 at 5:51 PM, maranble14 said:**
>
> Now we just need an implementation to allow crafts to hover.

I thought Firespitter still had this capability, and so any rotor using it also could?

1,161 posts

@Eskandare, thank you for providing these toys for the most Kerbal of all aircraft.

Here's a chopper I flew to KSC2 back in 0.15 - the Heron is the spiritual successor of the Damned Aerospace coaxial rotor:

+ Quote

First helicopter to KSC2 | KSP gallery (Google) | KSP gallery (Steam) | KSP legacy craft

Discussion thread - BD Armory dogfighters AI tournaments

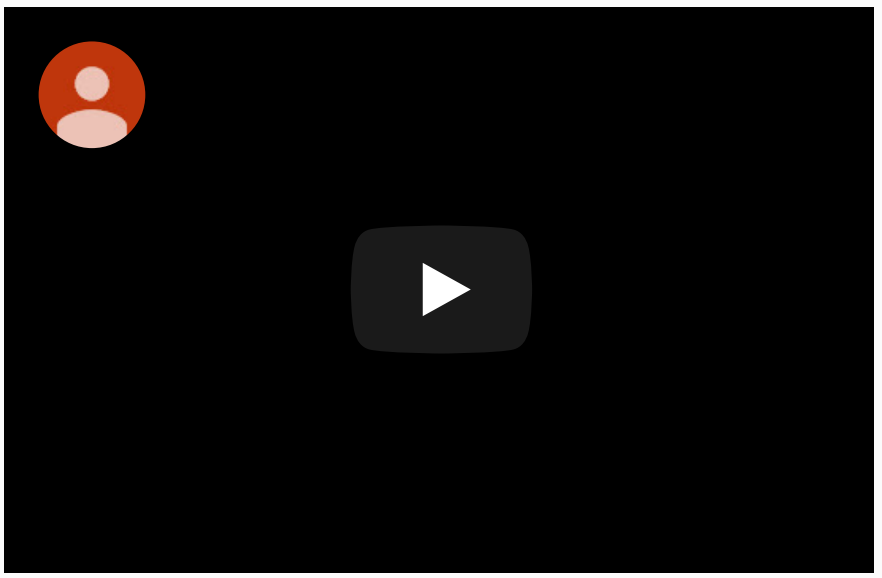
Eskandare

Eskandare Heavy Industries

●●●●

Posted July 2, 2016

Report post

> **On 7/2/2016 at 1:44 AM, StevieC said:**
>
> Surprised nobody is challenging/disputing my claim that hingeless rotors are superior to articulated, as making that claim on other fora has sometimes accidentally triggered flame-wars.
>
> Here's part of why I assert that hingeless rotors are superior.
>
> 

The only problem with rigid rotor masts is that once the blades slightly damaged or times out in accordance with the maintenance manual, the whole rotor head must be

Members

1,102

1,314 posts

Location: Sitting in my chair.

replaced, as it is one single piece this can be very expensive. Otherwise, they are great. As I understand, it doesn't have lead or lag like the fully articulated, instead it flexes.

> **On 7/1/2016 at 1:50 PM, StevieC said:**
>
> **Good**. I actually prefer rigid-rotors (even though calling them 'rigid' is a misnomer, they're properly called hingeless, since they rely on allowing the blades themselves to flex in order to serve the same function that the led/lag and flapping hinges fulfill on an articulated rotor-head) because they allow a rotorcraft to reach higher airspeeds and are more responsive to control-inputs.

Teetering hinge, fully articulated, semi rigid, and rigid are the terms used in the industry. I'm a certificated airframe and power plant mechanic with specialization in rotary wing.

> **On 7/2/2016 at 5:54 AM, colmo said:**
>
> I thought Firespitter still had this capability, and so any rotor using it also could?
>
> @Eskandare, thank you for providing these toys for the most Kerbal of all aircraft.
>
> Here's a chopper I flew to KSC2 back in 0.15 - the Heron is the spiritual successor of the Damned Aerospace coaxial rotor:
>
> 

That it is. I miss that rotor. I had to make my own.

+ Quote

theonegalen, colmo and Raptor9 like this

Eskandare Heavy Industries

- Check out my mods

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