FORCE AWAKENS THE INCREDIBLE CROSS-SECTIONS

ILLUSTRATED BY KEMP REMILLARD . WRITTEN BY JASON FRY

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CONTENTS

STORMTROOPER TRANSPORT	8	QUADJUMPER	32
POE'S X-WING	12	MILLENNIUM FALCON	34
COMMAND SHUTTLE	16	HAN'S FREIGHTER	36
FINALIZER	20	RESISTANCE TRANSPORT	40
REY'S SPEEDER	24	SNOW SPEEDER	42
TIE FIGHTER	26	SIZE COMPARISON	46
SF TIE FIGHTER	30	ACKNOWLEDGMENTS	48



INTRODUCTION

GALACTIC CIVILIZATION relies on technologies that have existed for millennia. Fasterthan-light communication and travel are routine, and even commonplace devices often boast vast amounts of computing power. Droids serve as cheap and expendable labor on countless planets, taking myriad forms to perform tasks too complicated, dangerous, or tedious for their organic masters. The galaxy's factions also have access to

VEHICLE TECHNOLOGY



Hyperdrives allow ships to travel faster than light, crossing the void between stars through the alternate dimension of hyperspace. Hypermatter particles hurl a ship into hyperspace while preserving its mass/energy profile, sending it along a programmed course until it drops back into normal space at its destination. Large objects in normal space ast "mass shadows" in hyperspace, so hyperspace jumps must be precisely calculated to avoid deadly collisions.



A number of galactic technologies work by manipulating gravity. Repulsorlifts allow a craft to hover or fly over a planet's surface by pushing against its gravity, producing thrust, while acceleration compensators keep starship crews alive during high-speed maneuvers. Tractor beams manipulate gravitational forces to push or pull objects, while interdiction fields create gravitational shadows that interfere with faster-than-light travel, pinning ships in normal space or yanking them out of hyperspace.

SENSORS

weapons of terrifying power, and defensive capabilities

meant to neutralize them. Throughout the long history

of the galaxy, war has always spurred technological

innovation. The galaxy now finds itself on the cusp of a

new conflict that will prove no exception. The First Order

has risen from the ruins of the Galactic Empire, and

mobilizes for war with the New Republic, armed with

the horrific products of its secret research laboratories.



Sensors gather information about the area surrounding a vehicle, highlighting threats and hazards. Passivemode sensors repeatedly scan the same area, scan-mode sensors have a longer range and collect data by emitting pulses in all directions, and search-mode sensors facus on a specific area for analysis. Data accumulated from scans is then fed into a sensor computer and relayed to a vehicle's operator. Most starships have sensor suites that analyze a wide range of spectra.

ENERGY WEAPONS



Loser cannons and turbolasers are based on the same principle as handheld blasters: energy-rich gas is converted to a glowing particle beam that can melt through targets. The largest such weapons are powerful enough to crack a planer's core. Starships also use ion cannons, which overwhelm electronic systems with ionized energy bursts, and physical ordnance such as concussion missiles and proton torpedoes, whose energy warheads release clouds of high-velocity proton particles.



Vehicles use a range of power technologies, most of which date back to the Republic's earliest days. The most common are chemical, fission, or fusion reactors, which consume a variety of fuels based on local resources. Large starships opt for fusion systems that contain hypermatter-annihilation cores, generating vast amounts of power. Many starship fuels are hazardaus to organic beings, circulating in ship systems as corrosive liquids ar combustible and poisonous gases.

SHIELDS



Shields are protective force fields that repel solid objects or absorb energy. Concussion shields repel space debris, while two varieties of deflector shield protect craft in battle. Ray shields deflect or scatter energy beams, while particle shields diffuse impacts from high-velocity projectiles and proton weapons. A shield's intensity gradually diminishes with distance from its projector. Most starships use a combination of ray and particle shielding for the most reliable protection.



PERILOUS PURSUIT

Persued by the First Order's TIE fighters, Rey pilots the *Millennium Falcon* through the area of Jakku she knows best, seeking shelter within the hollowed-out wrecks that make up the Starship Graveyard.



OUT OF THE SHADOWS Crammed inside their transport, stormtroopers of the First Order prepare for bottle. They have been trained since birth for a single purpose— to crush their enemies without mery.

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ACES HIGH

Acts Hich Once upon a time, a brave young X-wing pilot destroyed the Galactic Empire's ultimate weapon. Now, a bold new generation of Resistance aces continue the fight against the First Order.



THE FIRST ORDER'S top officers and dignitaries travel in bat-winged command shuttles, heavily guarded by TIE fighter escorts. Looking like dark birds of prey, command shuttles have formidable heavy laser cannons, but their biggest asset is their defensive capabilities. Advanced sensor suites in the upper wings monitor communications and scan for potential enemies long before they reach firing range, while the lower wings are lined with efficient shield projectors and powerful jammers. These technologies are the products of secret research conducted in the First Order's hidden shipyards and laboratories. One of these shuttles ferries the dark side apprentice Kylo Ren from the Star Destroyer Finalizer to the forlorn desert world of Jakku, in search of a secret that could allow Kylo to fulfil his destiny.

DATA FILE

avide rail

- > MANUFACTURER Sienar-Jaemus Fleet Systems
- > MODEL Upsilon-class shuttle
- > CLASS Transport
- > HEIGHT 37.2 metres (122.04 feet) with wings extended
- > CREW 1-5 plus up to 10 passengers
- > WEAPONS 2 twin laser cannons
- > AFFILIATION First Order



PROTECTIVE WINGS

Upon landing, the command shuttle's wings swoop up and retract to half their inflight height, encasing the long-range sensor arrays in the upper wings in protective armour. Powerful gears and shock springs protect both the sensors and the wing structure from damage. The lower wings' reinforced armour and potent shield generators protect the shuttle's crew cabin from enemy fire during takeoffs and landings, when the craft is stationary and most vulnerable to attack.



annon

1 14

Landing geo

11-1

1 H

111

shield

IMPERIAL SECRETS When the Empire collapsed, the Emperor's servants

fled into the Unknown Regions with some of his regime's greatest secrets. For years, military scout ships had explored far beyond the galactic frontier, surveying star systems and blazing hyperspace routes known only to a select few. Far from the prying eyes of the New Republic, the remnants of the Empire established new bases, shipyards and weapons labs, and began plotting a return to power.

Countermeasure system designed deflect incoming guided projectile

> Wing shape draws on decades of Imperial shuttle design

leat sink extends expected life of sensor systems

b-space communications tenno and hyperwave

mmer modulation node _

11

Locking mechanisn holds extended wing in position

Field interference

Wa

Wing retraction receiving track

Wing retraction

Warning indicates senso upper wings an and radiation le

r deflector shield jector array

Cockpit usually occupied by flight — officer pilot and c

pilot pr pt Hung

Landing lights







REY'S SPEEDER

REY'S PRIDE AND JOY is her custom speeder, an ungainly but powerful vehicle created using parts unearthed in the junkpiles of Niima Outpost, reclaimed from the Starship Graveyard, or acquired from Teedo traders. Armed with welding torches, hydrospanners, and bonding tape, Rey built a vehicle combining aspects of a speeder and a swoop, making use of sophisticated military hardware and civilian machinery. Rev's speeder is fast and can carry heavy loads, making it ideal for scavenging trips. The top-heavy craft would be difficult for any other pilot to control, but Rey's skills as a pilot match her genius as a mechanic.

them with racing-swoop afterburners, a modified

an array of repulsorlifts

taken from crashed

X-wing starfighters.

Rear stabilizer

vane

SCAVENGER SAFEGUARDS

Light-fingered scavengers are a fact of life on Jakku, and Rey knows that without her speeder she'd be even more trapped than she already is, unable to travel between the Starship Gravevard, her makeshift homestead, and Niima Outpost. Her speeder won't power up without a fingerprint scan, and she can electrify the chassis to give a powerful jolt to anyone who touches it while she's away.



HYBRID VEHICLE Engine status sensor clusters At the heart of Rey's speeder are powerful twin CPU housing Structural bracing turbojet engines reclaimed from a wrecked made from welded cargo-hauler. Rey mounted them in a stacked scrap parts configuration instead of side by side. and bolted them to powered Fuel tank amplifier intakes from an Imperial gunship. She then customized combustion chamber, and Footres Rear repulsorlifts Combustion chamber Fuel injector ring High-density heat shielding

> Baffles installed to change engine pitch and keep ripper-raptors away

protects rider

Exhaust cone increases thrust

velocity

Repulsorlift unit power inpu

DATA FILE

MANUFACTURER None (custom-made)

Fuel control node

High-pressure

fuel line

Power cell for

tart-up moto

Wires salvaged from

X-wing flight computer

Primary heat exchanger

Heat exchange

Safety grill and

debris filter

radiator

- > MODEL Customized repulsorlift vehicle
- > CLASS Hybrid speeder/swoop
- > LENGTH 3.73 meters (12.24 feet)
- CREW 1 pilot
- > WEAPONS None > AFFILIATION Rev

10-stage

compress

chamber

Directional steering

exhaust nozzles

Forward repulsorlifts

T-65 X-wings

salvaged from wrecked

TAKING TO THE SKIES

Rey's speeder is ridiculously overpowered when lightly loaded. The oversized engines give it remarkable acceleration, while the repulsorlift array lets it attain a flight ceiling akin to that of an airspeeder. When away from prying eyes, Rey lets her craft take flight, performing barrel rolls and other maneuvers that push both her speeder and her piloting skills to the limit.

repulsors

for rapid

deceleratio

Repulsor-powered engine intake duct (increases volume of airflow to maximize engine output)



Solar power phase one

BATTLE ABOVE THE SANDS

A generation ago, burning warships plummeted from space into the desolate wastes of Jakku. Now war has returned to the planet, as the *Millennium Falcan* duels with pursuing First Order TIE fighters.

SFTIE FIGHTER

THE FIRST ORDER'S feared Special Forces have considerable resources at their disposal. These include a specialized model of TIE fighter that packs additional armament into a craft designed for long-range operations away from a base or command ship. Special Forces TIEs are two-person fighters that carry a hyperdrive and deflector shields, as well as banks of high-yield deuterium cells that provide additional power to the engines, weapons, or shields and can be recharged from the TIE's solar panels. The TIE/sf's heavy weaponry and improved defensive capabilities make it a versatile attack ship suited to a range of mission profiles, from reconnaissance to combat operations.

WEAPONS PLATFORM

The Special Forces TIE's deuterium cells drive a weapons package far more powerful than that of a TIE/to. The TIE/st's primary weapons are its front-facing laser cannons, but a heavy weapon turret and warhead launcher gives it a 360-degree field of fire and the ability to deliver specialized ordnance. The pilot can fire all weapons, but the turret is ideally controlled by the TIE/st's rearfacing gunner.

Thrust nozzla

Miniaturized

Twin reactors give greater redundancy and survivability

> Starboard ion reactor

DATA FILE

- > MANUFACTURER Sienar-Jaemus Fleet Systems
- > **MODEL** TIE/sf space superiority fighter
- > CLASS Starfighter
- > LENGTH 6.69 meters (21.96 feet)
- > CREW 2 (pilot and gunner)

High-pressure radioactive

Heavy weapon turret

gas fuel tank

 WEAPONS 2 Sienar-Jaemus Fleet Systems L-59.6 laser cannons, SIFS Lb-14 dual heavy laser turret, Kuat Drive Yards Arakyd ST7 concussion and mag-pulse warhead launcher

> AFFILIATION First Order

SJFS L-s9.6 Left-hand flight Specialized alloy aser cannon control column bracing frame

Deflector shield generator

Pre-charged

power cells

MASS EFFECT

Pilot's

Where the TIE/fo uses a single ion reactor aft of the pilot's seat, the TIE/sf derives power from twin reactors set on either side of the command pod. The TIE/sf's additional armament, shield generators, and powercell banks create more heat than the craft can dissipate, a problem designers at SienarJaemus have attempted to solve with an experimental ion-flux cooling system. All of these systems make the TIE/sf substantially heavier than a standard TIE, and the pylons between the command pod and wings have been reinforced with layers of alloy bracing.

Phase two

converter coils

Phase one

converte

Long-range communica

Top hatch

Elector sea

Rear gunner's

Seat restraint

Gunner targeting

display Red hull shows Special

Overdrive ion-flux

cooling syst

Heavy-duty

nowe

QUADJUMPER

32

ORBITAL TRANSFER YARDS are busy places, where every second spent moving a freight container means credits lost from a shipping firm's bottom line. Quadjumpers attach magnetic clamps to the undersides of cargo containers, then use their quartet of massive thrusters to shove and yank the containers wherever the yard boss needs them to be. The quadjumper's bow cockpit is almost entirely viewports, giving the pilot maximum visibility amid the chaos of port. The other seats are typically reserved for relief pilots, engineers, or port officials.

A TUGGER'S LIFE

Captains of bulk freighters boast of flying from one side of the galaxy to the other, but most are helpless when it comes to seeing cargo across the final few kilometers between their hulls and their customers' hands. That job falls to spacetug pilots, and depends on their skill with throttles, control yokes, and tractor-beam emitters. Spacetug pilots are noticed only when they're in the way, and take perverse pride in that fact.

Cargo crane (retracted)

Upper repulsor

stabilizer van

SPECIAL MODIFICATIONS Outer thrust ring connects to ion drive Central thrust nozzle connects to atmospheric turbine drive Thrust bypass doors open when craft enters spaceflight mode Coola

Though quadjumpers are designed and sold as tugs, their power, maneuverability, and ability

to perform in both atmospheric and spaceflight modes make them appealing to prospectors and smugglers. Special modifications are needed to increase the quadjumper's cargo and fuel capacity, but its dorsal attachment points can easily pair with external fuel tanks, weapons mounts, and standard sensor packages.

locking claw

Retractable ladder



DATA FILE

Tow cable housina

- > MANUFACTURER Subpro
- > MODEL Quadrijet transfer spacetug
- > CLASS Spacetug

Landing

gear

- > LENGTH 7.98 meters (26.18 feet)
- > CREW 1 pilot, plus up to 2 passengers
- > WEAPONS None
- > AFFILIATION For sale





HEROES OLD AND NEW

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Reunited with their beloved Millennium Falcon, Han Sola and Chevbacca find new perils await them, born of a painful past. But new heroes have joined the fight against the forces that threaten the galaxy.





RESURRECTION OF EVIL On a frigid world deep in the galaxy's Unknown Regions, the commanders of the First Order review their loyal troops, promising that the weak and corrupt New Republic will soon be swept away.

122

Price its to the second



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ACKNOWLEDGMENTS

Kenp Renalleric First and Foreword 1'd like to thank Cameron Beck, Stacey Leong, Methow Azwedo, and Chris Medley-folwhose entention and help with Leordfini dipid assats was indigensoble in creating artwark for this book. Many thinks to J.W. Rindler, Freuh Meters, Public Holdgo, Phil Sozoth, Liebell Newell Todd, Somenthe Holland, Becca Friedman, Jacim Chro, Nillia Catch, Manyan Matorack, and evergore also on the drift Boro for their warm reception, hospitality, and help with 3PP What Intch Sap and Mall. The Same are de Jacose working with such o great goap here in San Francisco.

And of course, 1'd like to thank Owen Bennett, David Fentimon, Tom Morse, and the team at DK in London for having faith in my promised ability to complete on essentially impossible and took, and for striking fear into my heart when they first asked me if I wanted to do this:

I would like to thank Jason Fry, whose collaboration on this book could not have been more enjoyable and for running with some of my crazy ideas. I want to thank all of my good hiends at Nassive Black for teaching me the ways of the Force. I would also like to thank Hans Jenssen, Richard Chasemore, and everyone who worked on the original Ster *Nars: Interedite CossSections* for all the inspiration. Lastly, I have to thank JJ Abrams, Kathleen Kennedy, and George Lucos for making in all gossible.

Jeson Fry, Tanks to Poble Holdog, Phil Szostak, Laland Chee, Jonathan Rinzler, and al at Lucsaffin tes Navierig as save and al at Lucsaffin tes Navierig as the Windham, Cheis Reiff, and Chris Teness for a ce Erkonalogy. To bio Johnston far, well everydings, to David and Owen at DK for kooping os on track, and to all the previous DK writers upon whose shoulders we stadt. Aud; es davoys, to Emily and and Josuba for Idensing me.

DK Publishing: We would also like to thank Phil Szastak, Brian Miller, Natalie Kocekian, and Mike Siglain for their assistance with the creation of this baok.



Penguin Random House

Project Editer Dovid Fentimun Project Art Editor Owen Bernett Creative Technical Support Tom Monse Senior Pre-production Producer Jennier Murray Senior Pre-productions & Bell Managing Art Editor Ron Stabbart An Director Issa Lanzarini Publisher Julie Fenis Publisher Julie Fenis Publisher Julie Fenis

For Lucasfilm

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> First American Edition, 2015 Published in the United States by DK Publishing 345 Hudson Street, New York, New York 10014

Page design copyright © 2015 Dorling Kindersley Limited DK, a Division af Penguin Rondam House LLC 15 16 17 18 19 10 9 8 7 6 5 4 3 2 1 001−176207−December/7015

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A catalog record for this book is available from the Library of Congress. ISBN 978-1-4654-3815-7

DK baoks are ovailable at special discounts when purchased in back for sales promotions, premiums, fund-mising, or educational use. For details, contract: DR Publishing Special Markets, 345 Hudson Street, New York, New York, 10014 Special/Sales/Salek.com

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SEE

The stormtrooper transport unleashing its deadly cargo • Poe Dameron's X-wing in action • Kylo Ren's sinister shuttle • The terrifying power of the *Finalizer*

DISCOVER

The inner workings of Rey's speeder • The advanced technology of the First Order TIE fighter • The devastating weaponry of the Special Forces TIE fighter • The gigantic engines of the quadjumper

EXPLORE

The famous corridors of the *Millennium Falcon* • The vast interior of Han Solo's cargo hauler • The jury-rigged systems of the Resistance transport

• The brutal design of the First Order snow speeder • And much more!



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