MODEL-F OWA MINIMUM COST BOM

One-Way Attack Drone - Stripped for Single Use

> **Design Philosophy:** This drone flies ONCE. Every component that doesn't directly contribute to:
>
> 1. Getting to target (10km open / 1km urban)
> 2. Carrying 2kg payload
> 3. Being NDAA compliant
>
> **...gets CUT.**

WHAT GETS ELIMINATED

Removed Item	Why It Was There	Why It's Gone	Savings
~~RTK GPS ($295)~~	cm-level accuracy	Standard GPS is fine for 10km strike	**-$280**
~~Dual IMU~~	Redundancy	No redundancy needed - it's disposable	**-$30**
~~HD Digital Video~~	Quality FPV	Analog is cheaper, lower latency	**-$50**
~~Premium FC ($165)~~	Features	Basic F4 FC is sufficient	**-$130**
~~Ti shaft, custom motor~~	Performance	COTS motors are fine	**-$100**
~~Carbon fiber props~~	Durability	Plastic props work for one flight	**-$15**

~~Quality battery~~	Cycle life	Cheapest cells that deliver power	**-$50**
~~Telemetry~~	Data logging	Not coming back anyway	**-$20**
~~GPS return-to-home~~	Safety	It's not coming home	**-$0**
~~Fancy frame~~	Crash resistance	Cheapest frame that holds together	**-$50**

> **Total Potential Savings: $725+** from your original $2,000 build

MINIMUM VIABLE OWA DRONE - COSTED BOM

FRAME - Target: $30-50

Item	Spec	Source	NDAA	Cost (1k)	Notes
Frame Kit	7-8" basic X-frame	Armattan/ReadyMadeRC	USA	$35	Don't need premium CF
Hardware	M3 screws, standoffs	McMaster/Bolt Depot	USA	$5	Bulk buy
Subtotal				**$40**	

PROPULSION - Target: $80-120

Item	Spec	Source	NDAA	Cost (1k)	Notes
Motors (×4)	2806.5 or 2807 ~1300KV	EMAX/iFlight via US dist	**CHECK**	$48 ($12ea)	Need to verify source
Props (×4)	8045 plastic	HQProp/Gemfan	Allied	$8	Plastic is fine for OWA

Subtotal	**$56**

> **MOTOR PROBLEM:** Most cheap motors are China-made. Options:
>
> - **KDE Direct** - USA but expensive (~$50/motor = $200 for 4)
> - **Cobra Motors** - USA designed, verify manufacturing location
> - **Accept higher motor cost** as necessary evil
> - **Your custom motor** - if you can get cost to $25-30/unit at scale

FLIGHT ELECTRONICS - Target: $60-100

Item	Spec	Source	NDAA	Cost (1k)	Notes
Flight Controller	Basic F405/F722	Holybro/Matek	HK/USA	$35	Just needs to fly
ESC 4-in-1	45-55A	Holybro/T-Motor	CHECK	$40	Don't need 65A overkill
GPS	BN-880 or equiv	Holybro/Beitian	CHECK	$15	Basic GPS, no RTK
Subtotal				**$90**	

VIDEO SYSTEM - Target: $40-60

Item	Spec	Source	NDAA	Cost (1k)	Notes
VTX	400-800mW analog	TBS Unify / Rush	EU/Allied	$25	Analog is fine
Camera	Basic CMOS	RunCam/Foxeer	Allied	$15	600TVL is enough

Antenna	Dipole/whip	Generic	USA	$3	Don't need fancy LHCP
Subtotal				**$43**	

RECEIVER/CONTROL - Target: $30-50

Item	Spec	Source	NDAA	Cost (1k)	Notes
Receiver	TBS Crossfire Nano	TBS (EU)	NDAA OK	$25	Or ExpressLRS ($15)
Subtotal				**$25**	

POWER SYSTEM - Target: $80-150

Item	Spec	Source	NDAA	Cost (1k)	Notes
Battery	6S 2200-3000mAh LiPo	CNHL/Tattu	**RISK - CHINA**	$35	Molicel = +$25
Connector	XT60	Generic	USA avail	$2	Standard
PDB/Wiring	Integrated or basic	-	USA	$5	Or integrated ESC
Subtotal				**$42**	

> **BATTERY PROBLEM:** Almost ALL LiPo cells are Chinese. Options:
>
> - **Molicel (Taiwan/Korea)** - NDAA OK but more expensive
> - **Samsung/LG cells** - Korea, NDAA OK, need custom pack
> - **Accept this is a weak point** - most competitors will have same issue

PAYLOAD INTERFACE - Target: $10-20

Item	Spec	Source	NDAA	Cost (1k)	Notes
Release mechanism	Servo-based	Domestic	USA	$10	Simple servo release
Mount plate	3D printed/aluminum	In-house	USA	$5	Payload interface
Subtotal				**$15**	

WIRING/MISC - Target: $15-25

Item	Spec	Source	NDAA	Cost (1k)	Notes
Wire	Silicone 14-20AWG	BNTECHGO	USA	$5	
Connectors	JST, bullet, XT	Various	USA	$5	
Zip ties, tape	Misc	Amazon/McMaster	USA	$3	
Heatshrink	Assorted	3M	USA	$2	
Subtotal				**$15**	

TOTAL COST SUMMARY

Category	Target	Actual Est.	Notes
Frame	$40	$40	Achievable
Propulsion	$100	**$56-200**	Motor sourcing is key
Electronics	$90	**$90-165**	Depends on NDAA strictness
Video	$50	$43	Achievable

Receiver	$35	$25	Achievable
Power	$100	$42-80	Battery cell source TBD
Payload	$15	$15	Achievable
Wiring	$20	$15	Achievable
TOTAL	**$450**	**$326-658**	

Cost Scenarios

Scenario	Motor Solution	FC Solution	Battery	TOTAL
Aggressive	Verified Allied COTS ($48)	SpeedyBee F405 ($30)	CNHL LiPo ($35)	**$326**
Moderate	KDE/Cobra ($120)	Holybro ($65)	Molicel pack ($60)	**$478**
Conservative	KDE Direct ($200)	ARK Blue UAS ($165)	Custom Molicel ($80)	**$658**

PHASE PRICING ANALYSIS

Phase	Price/Unit	Min Cost	Gross Margin	Viable?
I	$5,000	$326-658	**$4,342-4,674**	✅ YES
II	$5,000	$280-550*	**$4,450-4,720**	✅ YES
III	$3,000	$250-480*	**$2,520-2,750**	✅ YES
IV	$2,300	$220-420*	**$1,880-2,080**	✅ YES

**Assumes 15-20% cost reduction at scale (10k+ units)*

> **You have massive margin at all phases if you solve the motor and battery sourcing.**

CRITICAL PATH ITEMS

1. MOTORS - Highest Risk

Problem: Cheap motors are Chinese. NDAA motors are expensive.

Solutions to investigate:

- ☐ Verify iFlight/EMAX supply chain - are motors made in allied nation?
- ☐ Get quote from KDE Direct for 1,000+ units
- ☐ Check T-Motor Velox compliance (Taiwan design?)
- ☐ Contact Cobra Motors re: manufacturing location
- ☐ Evaluate: Is your custom motor viable at $30/unit at 10k scale?

2. BATTERIES - Medium Risk

Problem: LiPo cells are 95% Chinese.

Solutions:

- ☐ Source Samsung 40T or Molicel P42A cells (Korea/Taiwan)
- ☐ Find US-based pack assembler
- ☐ Accept ~$20-30 premium over Chinese packs

3. FLIGHT CONTROLLER - Low Risk

Problem: Cheap FCs are Chinese, Blue UAS is expensive.

Solutions:

- ☐ Holybro is HK-based but may qualify under certain NDAA interpretations
- ☐ ARK Electronics is definitive Blue UAS but $165
- ☐ Middle ground: Holybro Kakute H7 at $65

THE $350 DRONE - REVENUE POTENTIAL

If you can hit **$350/unit** at 10k scale, your economics look like:

Phase	Your Share*	Revenue	COGS	Gross Profit	GP %
I	2,500 units	$12.5M	$875k	**$11.6M**	93%
II	6,000 units	$30M	$1.9M	**$28.1M**	94%
III	14,000 units	$42M	$4.2M	**$37.8M**	90%
IV	30,000 units	$69M	$9.0M	**$60M**	87%
TOTAL		**$153.5M**	**$16M**	**$137.5M**	**90%**

**Assumes you capture 10-20% of total phase volume*

> **Total potential: $150M+ revenue, $130M+ gross profit across all phases**
>
> The question isn't "can you make a cheap drone" - it's
> **"can you make a cheap drone that WORKS and is NDAA compliant."**

MODEL-F OWA Cost Analysis | Generated December 2024