

FLYHT Aerospace Solutions Ltd.

25 June 2024

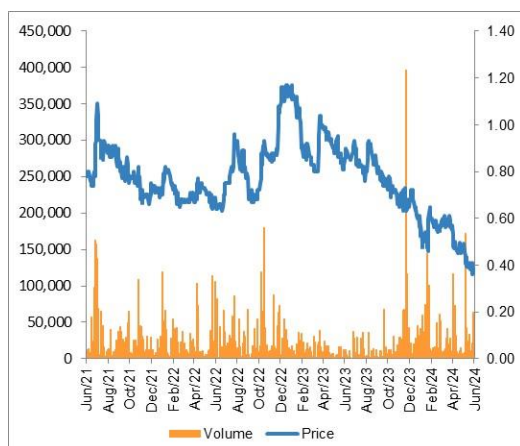
FLY-V: \$0.38, FLYLF-OTC: US\$0.24

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Price	\$0.38	Market Cap	\$14.8	
Target Price	\$1.80	Debt	\$12.7	
Projected Return	374%	Cash	\$1.5	
52 Week Range	0.94/0.325	EV (\$m's)	\$26.0	
Basic Shares O/S (000's)	38,998			
FD Shares O/S (000's)	42,733			
Insiders	3.5%			
Y/E December (\$000's)	2022	2023	2024E	2025E
Revenues	23,879	20,145	24,324	30,098
EBITDA	251	(2,834)	1,142	3,679
EPS	-0.03	-0.10	-0.01	0.04
EV/Sales	1.1x	1.3x	1.1x	0.9x
P/E	nmf	nmf	nmf	8.6x

Q1/24: WITH RECEIPT OF 2 OUT OF 4 STCS AND BALANCE SHEET STRENGTHENED (\$5.0M DEBENTURE), FLYHT IS POSITIONED TO COMMENCE EDGE DEVICE SALES. TARGET PRICE \$1.80.

- Q1/24.** Total revenues increased 0.7%: **SaaS** revenues grew 14.5% reflecting customers fleet growth and the benefit of revised weather contracts; **Hardware** sales continue to disappoint, declining -62.5% as 6 AFIRS 228 units were sold vs. 32 LY, and **Services** grew 127.8% as CrossConsense delivered on an AMOS migration contract. **License fees** remain nominal as expected as FLYHT awaits completion of design refresh of the AFIRS 228.
- Gross margins** increased YoY to 64.0% vs. 57.3% LY due to the lower contribution from lower margin hardware revenues.
- EBITDA.** The net impact of essentially flat sales, higher GM and lower expenses resulted in a substantial improvement in EBITDA loss, improving to -\$594k vs -\$1,344 LY.
- Backlog** remains healthy at \$37.5m with a sales funnel of \$82m (probability weighted on \$200m) of which ~45% is Edge devices related.
- Supplemental Type Certificates (STCs).** Of the 4 STCs required for the Edge and Edge+, FLYHT has received the 2 STCs (A320 and 737 NG) for the (flange) Edge device in Canada. Consequently, the familiarization process has commenced in other geographies for these STCs. As for the (4MCU) Edge+, having received the STCs for the flange product, receipt of the STCs for the Edge+ product is expected to be faster. We expect STC submission to occur once participating airlines are signed and both approvals to be received in Q4/24. All 4 STCs are essential to moving items out of the sales funnel into the sales backlog.
- Balance sheet.** FLYHT finished Q1/24 with \$1.5m cash on hand and \$7.7m in debt. On 10/6/24, FLYHT announced the closing of a \$5.0m unsecured debenture. The debenture term is 3 years, pays 12% and 2.0m warrants were issued at an exercise price of \$0.4839. The proceeds allow FLYHT to pursue additional STC certifications and to accelerate the commercialization efforts of its 5G aviation and weather solutions product lines.
- Valuation.** We derive our valuation using 2025E estimates (from 2024E). We forecast that our 2024E revenue growth of 20.7% will increase to 23.7% in 2025E as Edge and weather device sales begin to be recorded. We continue to believe that F2024 will be a pivotal year for FLYHT. On this basis, we derive a 12-month target of \$1.80.



Profile

FLYHT Aerospace Solutions Ltd is a Canadian designer and developer of hardware and software for the aerospace industry. Its primary product, the Automated Flight Information Reporting System (AFIRS), and when qualified, supplemented with the AFIRS Edge, operates on multiple aircraft types and provides real-time streaming functions, such as safety services, voice and text messaging, data collection and transmission, as well as on-demand streaming of flight data recorder (black box), engine and airframe data. AFIRS data is transmitted via the Iridium satellite network to its UpTime ground-based server, which in turn routes the data to customer-specified end points and provides an interface for aircraft interaction.

Disclosures

Please refer to important disclosures on page 18.

Q1/24 results

In Q1/24, while total revenue growth was essentially flat YoY (+0.7%), growth by sales components mix was varied vs Q1/23. SaaS and Services revenues showed healthy growth while Hardware (all AFIRS 228) continues to disappoint and Licensing was nominal, as expected.

The essentially flat sales combination of the improved gross margin (64.0% vs 57.3%) and reduced expenses (down 9.7%) resulted in a reduced EBITDA loss of -\$594k vs -\$1,344k LY.

With the base business essentially flat, the bulk of management's focus was on positioning the company for the commercialization of its next-generation EDGE device, which is expected to ramp in Q4/24. Apart from substantial marketing:

- FLYHT contracted with One Stop Systems to manufacture the AFIRS Edge product lines, and to provide design services for the Edge+.¹
- STC certification was received from Transport Canada for the flange version of the 5G AFIRS Edge on:
 - Airbus A320 aircraft², and
 - Boeing 737 NG³.
- In addition, FLYHT's long-term OEM partner engaged FLYHT to undertake a design refresh for the Airbus line fit satcom program⁴.

On the balance sheet front, on 10/6/24, FLYHT announced that it had closed a \$5.0m unsecured debenture agreement.

Q1/24 Revenues

In Q1/24 total revenue growth was 0.7% YoY (Figure 1), the ramp in Technical Services offset the decline Hardware sales.

Figure 1: FLYHT Q1/24 revenues (\$'000's)

	Q1/24	Q1/23	% change	Explanation
SaaS revenues	2,764	2,413	14.5%	Growth driven by increases in customers fleet size, increased data usage and weather data
Hardware	664	1,171	-62.5%	6 AFIRS 228 units shipped in Q1/24 vs. 32 in Q1/23.
Licensing	79	9	806.0%	As expected.
Technical Services	1,284	564	127.8%	Reflects increased AMOS data migration project work (CrossConsense), together with an increase in certification services provided.
Reported Total	4,791	4,757	0.7%	

Source: Company reports; KRC Insights

¹ PR 23/1/24

² PR 16/2/24

³ PR 11/6/24

⁴ PR 19/3/24

SaaS revenues. SaaS revenues are billed on a per aircraft basis. The 14.3% YoY growth represents FLYHT’s 9th sequential revenue increase as customers have emerged from COVID lockdowns and organic growth commences. In terms of organic growth, apart from a return to pre-pandemic flight levels, certain customers’ fleet sizes have also increased. Of note also is the recovery in weather revenues (not disclosed separately) where increased flights are resulting in an increase in weather data being provided to meteorological organizations.

Hardware. AFIRS hardware sales comprised sales of 6 AFIRS 228 units in Q1/24 vs. 32 units shipped in Q1/23. There were no sales of TAMDAR or WVSS weather devices (but refer to commentary below) and the new Edge devices have received 2 out of 4 STCs.

Licensing. License revenues are generated from direct installs of AFIRS 228 units on Airbus aircraft by FLYHT’s long time OEM partner. This is the line fit of cockpit Iridium, SATCOM communications option of choice for Airbus customers. Hence, the pace of Airbus deliveries to end customers of the A320, A330 and A220 influence these revenues which do not generate SaaS revenues. Given the opaque nature of the OEM partner’s orders, it is difficult to determine when/if follow-on orders will occur. FLYHT received its last material order from its OEM partner on 4/5/22, but this partner requested a hardware update of the AFIRS 228 which FLYHT announced on 19/3/24. This implies a resumption of meaningful Licensing revenues to occur 2025/2026.

Technical Services. The 127.8% YoY revenue increase was driven primarily by AMOS⁵ data migration project work delivered and an increase in customer requests for certification services. The AMOS migration work is undertaken at FLYHT’s German subsidiary, CrossConsense, which focuses on maintenance, repair and overhaul (MRO) solutions.

Referring to the geographical breakdown of revenues, meaningful movements include: YoY revenue growth was recorded in North America (+52%) and Europe (+69%, due to CrossConsense); while Canada recorded a decline (-76%, as West Jet placed a large order in Q1/23).

Q1/24 Gross Margins

Gross margins improved due to sales mix (Figure 2).

Figure 2: FLYHT Q1/24 margins

	Q1/24	Q1/23	Explanation
Gross margin	64.0%	57.3%	Higher margins due to lower hardware sales (14% vs 37% LY)

Source: Company reports; KRC Insights

Gross margins are a function of sales mix with the two largest swing factors in a quarter being: the mix between lower margin hardware (AFIRS, FlightLink /TAMDAR units) and higher margin License fees and SaaS revenues. However, it is worth bearing in mind that hardware margins themselves can vary substantially according to a number of factors, including the number of software services included.

⁵ AMOS software solution allows airlines to manage their maintenance, engineering and logistics needs and to assure their compliance with the complex system of aviation regulations.

Q1/24 Expenses

Total expenses decreased 11.7%, primarily due to a reduction in Administration expenses (Figure 3).

Figure 3: FLYHT Q1/24 expenses (\$'000's)

	Q1/24	Q1/23	Explanation
Distribution expenses	1,561	1,759	Declined 11.3% due to changes in staffing levels resulting from a geographic re-alignment and lower travel
Administrative expenses	1,055	1,063	In-line YoY
R&D	1,206	1,412	The 14.6% decline was due to the evolution from development of the Edge devices to product certification
Total expenses	3,822	4,234	-9.7%

Source: Company reports; KRC Insights

Q1/24 EBITDA

The net impact of the above (flat sales, higher gross margins and decreased expenses) resulted in a lower EBITDA loss of -\$594k vs. -\$1,344k in Q1/23.

Balance Sheet

Cash balances decreased to \$1.5m at the end of Q1/24 vs. \$2.0m at the end of Q4/23. The primary contributors to the decline were:

- The net income loss of \$794k, a \$598k decline in working capital, and \$264k repayment of borrowings, and
- Offset in part by an increase in use of the credit facility of \$1.2m.

Total debt was \$12.7m (Figure 4), up from \$6.9m at the end of Q4/24. Loans and Borrowings comprises low interest government debt, the credit facility has a \$2.0m limit and a \$5.0m unsecured debenture was closed on 10/6/24:

Figure 4: FLYHT total debt at Q1/24 (\$'000's) + unsecured debentures

	Short term	Long term	Total
Loans and borrowings	785	3,385	4,171
Credit facility	1,175		1,175
Lease liability	470	1,844	2,315
Unsecured Debenture		5,000	5,000
Total Debt	2,431	10,230	12,660

Source: Company reports, KRC Insights

After the closing of the debenture (refer below), FLYHT had 42.7m fully diluted shares outstanding (Figure 5), up 2.0m from Q4/23 due to the debenture:

Figure 5: Fully diluted number of shares

	Total
Shares	38,998
Options	1,735
Debenture warrants	2,000
Total FD # shares	42,733

Source: Company reports, KRC Insights

Backlog and Sales Pipeline

Both the contracted backlog and sales pipeline remained flat with Q4/23 at \$37.5m and \$82m (\$200m probability weighted).

Backlog comprises ~45% Edge products/services, 10% weather and 45% AFIRS 228 products⁶/services. CrossConsense has an AMOS backlog of ~\$3.0m.

Subsequent event - \$5.0m unsecured debenture

On 10/6/24, FLYHT announced the closing of a \$5.0m unsecured debenture with Pinnacle Island II LP, an unrelated third-party lender.

Terms of the debenture:

- **Term:** 3 years
- **Rate:** 12%
- **Use of proceeds:** The proceeds allow FLYHT to pursue additional Supplemental Type (STC) certifications and to accelerate the commercialization efforts of its 5G aviation and weather solutions product lines. FLYHT is pursuing several large deals for the Edge, Edge+, FLYHT-WVSS-II hardware (weather) and recurring software services.
- **Other:** The Lender also received 2,000,000 common share purchase warrants, with each Warrant exercisable for a period of 3 years into one common share at an exercise price of \$0.4839.
- **Covenants:** Not disclosed.
- **Repayment.** Repayments are aligned with management's anticipated timeline of EDGE revenues being recognized, with interest only being paid on a quarterly basis and repayment in 36 months' time.

FLYHT received 91% of the proceeds after a 5% discount in terms of the deal and a finder's fee of 4%.

⁶ AFIRS 228 hardware backlog is ~\$7.0m

Significant Developments (Updated)

Management's primary focus is on FLYHT's two primary incremental revenue activities: The AFIRS Edge and weather opportunity. Currently, FLYHT has received both Canadian STCs (Airbus A320 and Boeing 737) for the Edge device (flange mount) and is in the process of obtaining the 2 STCs for the Edge+ (4MCU, plug-and-play replacement).

Here, we provide some background and updates on these two opportunities as these two related developments are central to our revenue growth forecasts.

AFIRS Edge (Edge and Edge+) devices

The AFIRS Edge and Edge+ devices are FLYHT's new flagship offerings. Due to its 5G capability, FLYHT is positioning the Edge devices to become the avionics device of choice for Wireless Quick Access Recorders (WQAR) and Aircraft Interface Device functions. We continue to believe that these devices, subject to Supplemental Type Certificates (STC) certification, will be a company maker for FLYHT.

Refer to Appendix I: AFIRS Edge and Edge+ for more detail on this product line.

At a high level, the STC process can be described by the following sequential events:

- **Provisional STC** is received once all regulatory authority formalities have been complied with. This STC allows for the device to be installed on the appropriate aircraft for final testing.
- **STC** is issued once final testing on an aircraft is completed.
- **Familiarization** occurs when one regulatory airline body (e.g. Transport Canada) who issued the STC, submits its documentation supporting the STC to its equivalent authority in another country (e.g. the US Federal Aviation Authority) for approval in that country (i.e. via existing bilateral agreements). That country relies on the work performed by the country issuing the STC, and once it has determined that the STC complies with local aviation laws, it will issue its STC relevant to that country.

FLYHT's strategy is to have the STCs completed in Canada, and then, via familiarization, have them approved in other jurisdictions as quickly as possible, including the US and Europe.

Currently, FLYHT has completed two STCs for the Edge device for aircraft that collectively cover ~70% of commercial airlines: the narrow body Airbus A320 and Boeing 737 Max. Each of these aircraft require 2 STCs: one for the standard Edge device (flange mount) and the other for the Edge+ (rack mount 4 MCU version), which is effectively a plug-and-play replacement of the incumbent wireless product.

The STC progress for the Edge device by aircraft type is provided in Figure 6:

Figure 6: FLYHT flange mount Edge STC partner progress

	Airbus A320	Boeing 737 NG
Customer	Canada Jetlines Operations Ltd	Air North
Date announced	4/10/23	31/10/23
STC Progress	<ul style="list-style-type: none"> - Completed - Completed - Completed - Completed (16/2/24) 	<ul style="list-style-type: none"> - Completed - Completed - Completed - Completed (11/6/24)
Contract value*	US\$3.2m	US\$0.7m
Additional details	Installing both AFIRS 228 and Edge devices. Software and services includes FLYHTHealth™, FLYHTLog™ and AFIRS Gateway	Installing both AFIRS 228 and Edge devices. Software and services includes FLYHTHealth™, FLYHTLog™ and AFIRS Gateway,

Source: Company reports; KRC Insights * =over the life of the contracts

As for the Edge+, FLYHT has completed its conformity inspections of the finished product initial production and its manufacturing partner, OSS, is about to complete its QAL testing with reports to be finalized and written by the end of July.

This will allow for the commencement of the 2 Edge+ STCs certification process at that time, which is expected to be completed in the latter half of 2024.

WVSS weather device

FLYHT’s WVSS-II water vapour sensor system is installed on aircraft and must be used in conjunction with either the AFIRS 228 or an AFIRS Edge. The WVSS-II is used for real-time weather Aircraft Based Observations (ABO) for meteorologists and airlines, including contrail avoidance. Weather is constantly changing, making real-time ABOs a prime source of recurring revenue in support of weather forecasting models and aviation operations.

FLYHT acquired the WVSS device on 20/9/21 for US\$500k. Refer to Appendix II: Water Vapor Sensing System (WVSS-II) for product details.

On 30/8/23, validation of this acquisition was received when FLYHT announced a partnership between FLYHT, the United Kingdom's Meteorological Office (UK Met) and Loganair. Salient terms of the contract include:

- The contract is valued at ~US\$6.9m (~C\$9.3m) provided that all goods and services are delivered over the eight-year term of the agreement.
- Intent is to improve the accuracy of weather forecasts, improve prediction of localized severe weather in the UK and achieve sustainability goals.
- Benefits are expected in the form of more efficient route planning and supporting aims to reduce CO₂ emissions.

The contract is for UK Met to acquire 30 WVSS-II atmospheric water vapour sensors devices, with the initial devices being installed on Loganair's Embraer 145 aircraft that fly across the UK and for the balance to be installed on a second airline.

The hardware portion of the initial sale (Loganair) is for 13 units. The FLYHT-WVSS-II sensor is under production in its Calgary facility, and FLYHT is tracking and scheduling with Loganair to synchronize aircraft maintenance schedules so first installations can be completed in Q4/24 after receipt of STCs for both the Edge and the WVSS-II⁷.

Management estimates the 30 hardware units could generate \$2.5m in revenues, which excludes the SaaS portion.

FLYHT has the only two air borne observation (ABO) weather devices (TAMDAR and WVSS-II) certified for commercial aviation worldwide. FLYHT is in discussion with several other national meteorological agencies to provide those agencies with ABO-based solutions.

Marketing

In anticipation of/concurrent with the \$5.0m unsecured debenture and STC progress, FLYHT has already increased its marketing of the Edge devices:

- **China Aviation New Technology Forum.** On 11/12 April 2024, FLYHT was a Silver Sponsor of, and attended, the China Aviation New Technology Forum in Hangzhou, China and presented the Edge+.
- **Aerospace Tech Week Europe 2024.** On 17/18 April 2024, FLYHT attended the *Aerospace Tech Week Europe 2024 in Munich, Germany*. Focus of the show was:
 - to promote the WVSS-II sensor and related weather products, specifically on the WVSS's ability in contrail detection and avoidance.
 - CrossConsense's AMOS migration and tech support offerings.
- **Aviation Maintenance Conference (AMC).** On 19-23 May 2024, FLYHT attended the AMC in Florida, USA.

Subsequent to the China Aviation Technology Forum, FLYHT went on a 10-day China sales trip and met with 5 of the country's largest 11 airlines, which represent a combined fleet of 900 A320 aircraft. China has a mandate for wireless post-flight transmission of QAR data (competitive advantage of the Edge devices) and hence makes China's commercial aviation industry a significant opportunity for the Edge devices, and for the Edge+ in particular.

Forecasts/Estimate Changes

We introduce F2025 revenue/earnings forecast and move our valuation from F2024 to F2025.

We summarize our principal revenue considerations for F2024/5 by revenue segment as follows:

⁷ UK Edge and WVSS-II devices STCs for the Embraer ERJ-145 both listed as "In progress" per the Q1/24 MD&A p10

- **SaaS.** The underlying recovery in the airline industry is expected to persist, driving a continued recovery in FLYHT’s customer base. Layer on top of this increased weather revenues from NOAA, commencement of the UK Met contract and initial Edge device contribution.
- **Hardware.** The first half of 2024E is to be driven by existing orders for the AFIRS 228, with the latter half of the year driven by weather (UK Met: WVSS-II and Edge) and the ramp of the Edge device. Once the STC familiarization process is complete for other geographies (mainly Europe and the Far East), we believe that orders will move out of the pipeline into the order book (covered above). Depending on timing of the receipt of STCs for the Edge+, it is likely that Edge+ orders will be recorded late 2024/early 2025. Recall, FLYHT has expanded its sales channels (ex-Teledyne sales employees and MBS) and is actively adding to the sales pipeline by marketing the Edge and AI suite of products to potential clients
- **Licensing.** FLYHT’s OEM licensing agreement for line-fit SATCOM AFIRS 228 solutions is lumpy and consequently difficult to forecast. Based on the design refresh announced 19/3/24, we forecast nominal revenues in F2024E with revenues expected to start in late 2025E.
- **Technical Service.** Revenues are typically generated when a customer requires an AFIRS or FlightLink/TAMDAR installation on a new aircraft type. Also, CrossConsense has a component of Technical Services revenues derived from data migration projects. CrossConsense currently has an AMOS backlog of \$3.0m and we expect further contract wins.

EBITDA. With forecast revenue growth of 22% p.a. from 2023-2025E, EBITDA is forecast to grow from -\$2.8m in 2023E to \$3.7m in 2025E.

Forecasts

In Figure 7 we provide an overview of our revenue forecasts:

Figure 7: FLYHT revenue forecasts (\$000's)

	Notes	2024E	2025E
Base run rate	1	16,000	18,000
Add:			
Weather	2	1,000	3,000
China	3		2,000
OEM licensing	4		500
New business	5	7,324	6,598
Current estimate		24,324	30,098

Source: KRC Insights

Notes to revenue forecasts:

1. FLYHT’s base run rate post COVID based on Q1/24 revenues; 2024E and 2025E represents continued post COVID recovery.
2. WVSS (weather) hardware order received in 2023 from UK Met Office to be fulfilled in 2024/2025. Associated initial SaaS revenue contributions are incremental.

3. China has a mandate to move to wireless QAR (a core function of the Edge/Edge+ devices). We believe that FLYHT is competitively positioned to win a percentage of this business.
4. Licensing revenues are forecast at \$0.50m in 2025E, with meaningful contribution starting in 2025E.
5. KRC Insights estimate of new business, primarily driven by the contribution from the Edge devices. Recall, that the company has an existing \$37.5m order book and a sales pipeline of \$82.0m.

Valuation

Our target of \$1.80 is derived from a sum of parts approach (Figure 8):

- **SaaS.** Applied a 5.4x multiple applied to EV/2026E revenue estimates, which is in line with the average multiple of Canadian SaaS companies.
- **Hardware and Licensing.** We apply a 1x revenues multiple to both hardware and licensing revenues.

Figure 8: FLYHT valuation. Sum of parts (000's), EV/2024E Sales

	2024E	Multiple	Value
SaaS Revenues	14,171	5.4x	76,521
Hardware	11,427	1.0x	11,427
Licensing fees	500	1.0x	500
Enterprise value			88,448
Debt			12,660
Cash			1,482
Equity			77,270
FD # shares (Figure 5)			42,733
Price/share			1.81
Rounded			1.80

Source: KRC Insights

FLYHT is currently trading at 0.9x EV/our 2025E revenue forecasts (Figure 9). The opportunity for investors is to benefit from multiple expansion as FLYHT delivers against our forecasts, which would be evidence of its ability to accelerate both hardware deployments (AFIRS, Edge and weather devices) and associated SaaS revenues.

Figure 9: FLYHT valuation multiples (\$m's where applicable, pricing at 24/6/24)

	Symbol	Price	Mkt Cap	EV	EBITDA		Revenues		Rev Growth	EV/Revenues	
					2023A	2025E	2023A	2025E		2023A	2025E
FLYHT Aerospace Solutions Ltd	FLY.V	\$0.38	\$14.8	\$26.0	-\$2.83	\$3.68	\$20.1	\$30.1	49.4%	1.3x	0.9x

Source: KRC Insights

We note, by reference to Appendix III: FLYHT share price relative performance (12 months), that the FLYHT share price has underperformed both relative to the airlines and air framers. This can be attributed in part to poor AFIRS 228 sales, longer-than-expected time to complete STCs and the balance sheet (now rectified with the \$5.0m unsecured debenture).

Figure 10: FLYHT historical and forecast income statement (\$000s)

Dec year-end	\$000's	2021	2022	2023	Q1/24	Q2/24E	Q3/24E	Q4/24E	2024E	2025E
SaaS		5,994	8,158	10,693	2,764	2,897	2,976	4,060	12,697	14,171
% growth		-18.2%	36.1%	31.1%	14.5%	7.7%	6.7%	44.9%	18.7%	11.6%
Hardware		3,394	4,720	4,273	664	455	2,269	4,139	7,527	11,427
% growth		47.2%	39.1%	-9.5%	-62.5%	-61.2%	126.5%	1162.1%	76.1%	51.8%
Parts sales/Licensing		1,551	9,101	1,962	79			21	100	500
% growth		-57.3%	486.8%	-78.4%	806.0%	-100.0%	-100.0%	-18.7%	-94.9%	400.0%
Services		380	1,900	3,216	1,284	800	800	1,116	4,000	4,000
% growth		-3.2%	400.1%	69.3%	127.8%	7.0%	-1.8%	2.4%	24.4%	
Revenues		11,319	23,879	20,145	4,791	4,152	6,045	9,336	24,324	30,098
Total revenue growth		-17.1%	111.0%	-15.6%	0.7%	-31.3%	18.6%	119.9%	20.7%	23.7%
Cost of revenue		(4,849)	(8,673)	(8,317)	(1,723)	(1,364)	(2,550)	(4,209)	(9,847)	(12,737)
Gross profit		6,470	15,206	11,827	3,067	2,788	3,495	5,127	14,477	17,361
Distribution Expenses		(3,870)	(5,912)	(6,422)	(1,561)	(1,499)	(1,499)	(1,278)	(5,838)	(6,345)
Administration Expenses		(3,384)	(5,082)	(4,048)	(1,055)	(934)	(997)	(881)	(3,867)	(4,274)
R&D		(4,447)	(4,620)	(4,849)	(1,206)	(1,038)	(1,100)	(941)	(4,286)	(3,762)
Total costs		(11,701)	(15,614)	(15,319)	(3,822)	(3,471)	(3,597)	(3,101)	(13,991)	(14,381)
Operating income		(5,231)	(409)	(3,492)	(755)	(683)	(102)	2,026	486	2,980
Interest and other income		104	40	114	137			0	137	137
Forex, Interest paid, convertible deb		(732)	(624)	(659)	(169)	(246)	(246)	(324)	(985)	(1,260)
Net income before taxation		(5,859)	(992)	(4,037)	(787)	(930)	(348)	1,702	(362)	1,857
Taxation		0	(11)	(12)	(8)	37	14	(29)	14	(74)
Net income		(5,859)	(1,003)	(4,049)	(794)	(892)	(334)	1,673	(348)	1,783
EPS - Basic		(\$ 0.19)	(\$ 0.03)	(\$ 0.10)	(\$ 0.02)	(\$ 0.02)	(\$ 0.01)	\$ 0.04	(\$ 0.01)	\$ 0.05
EPS - FD		(\$ 0.19)	(\$ 0.03)	(\$ 0.10)	(\$ 0.02)	(\$ 0.02)	(\$ 0.01)	\$ 0.04	(\$ 0.01)	\$ 0.05
		2021	2022	2023	Q1/24	Q2/24E	Q3/24E	Q4/24E	2024E	2025E
Gross profit	%	57.2	63.7	58.7	64.0	67.1	57.8	54.9	59.5	57.7
Operating margin	%	(46.2)	(1.7)	(17.3)	(15.8)	(16.5)	(1.7)	21.7	2.0	9.9
EBITDA	\$000's	(4,538)	251	(2,834)	(594)	(503)	78	2,161	1,142	3,679
EBITDA margin	%	-40.1	1.1	-14.1	-12.4	-12.1	1.3	23.2	4.7	12.2
Effective tax rate	%	0.0	(1.1)	(0.3)	(1.0)	4.0	4.0	1.7	4.0	4.0
Net margin	%	(51.8)	(4.2)	(20.1)	(16.6)	(21.5)	(5.5)	17.9	(1.4)	5.9

Source: Company reports, KRC Insights

Appendix I: AFIRS Edge and Edge+

FLYHT’s AFIRS Edge family solves 2G/3G obsolescence – it is FLYHT's next generation 5G (3G/4G/LTE compatible) Wireless Quick Access Recorder (WQAR), Aircraft Interface Device (AID) and edge computing platform. The family comprises 2 models:

- AFIRS Edge™: targets all aircraft as an aftermarket upgrade. Requires a C-check for installation.
- AFIRS EDGE+™ (aka 4MCU): is direct plug-and-play replacement for the large installed base dependent on 2G/3G WQAR. It can be installed overnight.

The Edge devices:

- Provides ground network access (3G/4G/5G)
- Has Aircraft Interface Device (AID) functions
- Is Iridium Certus capable
- Provides onboard IoT data via Bluetooth
- Enables legacy aircraft data to be sourced
- Reuses existing FLYHT avionics software, and
- The prototype build is complete and initial production orders have been placed

Figure 11: FLYHT AFIRS Edge™ devices



Source: FLYHT

AFIRS Edge is targeting 4 discrete markets:

- **WQAR replacement** - 2G/3G connectivity being retired. AFIRS Edge™ is engineered and designed as a multi-channel WQAR with LTE/4G and 5G network availability. It also allows simultaneous DAR and QAR recording.
- **Edge Computing** - AFIRS Edge™ serves as an Internet of Things (IoT) gateway on the aircraft and can support new IoT sensor technologies as they are deployed. Primary focus is its application for Actionable Intelligence, enabling predictive and proactive operations in real-time.
- **Flight Deck Enabler** - As an Enhanced Aircraft Interface Device (AID), it enables enhanced EFB applications.
- **Uploader** - wireless avionics software and onboard data loading solution.

Appendix II: Water Vapor Sensing System (WVSS-II)

On 20/9/21, FLYHT announced the acquisition of Water Vapor Sensing System (“WVSS-II”) product line from SpectraSensors Inc. for US\$500k cash.

The acquisition includes manufacturing assets, inventory, aviation-specific intellectual property, and a license to SpectraSensors®’ Tunable Diode Laser Absorption Spectroscopy (“TDLAS”) technology for use in the weather and aviation markets. FLYHT has prepared 1,800ft² of manufacturing space at its Calgary headquarters to accommodate the sensor manufacturing equipment purchased from SpectraSensor.

No revenues are attached to the acquisition, however, at the time of acquisition, a potential order from the UK’s Met Office and transition away from Rockwell Collins as the service provider for the existing installs was expected.

Atmospheric water vapor measurements from commercial aircraft are now available to complement the real-time winds and temperatures available from the Aircraft Communication, Addressing and Reporting System (ACARS). The WVSS-II:

- Is a sensor installed on commercial aircraft,
- Provides upper air meteorological water vapour measurements in near real-time throughout an aircraft’s flight,
- Data, when combined with the atmospheric data on the aircraft, results in a complete weather sounding (temperature, wind, moisture) and consequently directly benefit weather forecasting and improve weather support to aviation,
- Is cheaper than radiosondes⁸, and
- Is extremely reliable, accurate and accepted by the World Meteorological Organization (WMO).

Deployment of the WVSS device is shown in Figure 12.

Figure 12: WVSS II



Source: FLYHT

⁸ an instrument carried by balloon or other means to various levels of the atmosphere and transmitting measurements by radio.

The WVSS-II product will enhance FLYHT's weather business by adding additional hardware, integration and recurring revenue sources to its existing Tropospheric Airborne Meteorological Data Reporting (TAMDAR™) and Aircraft Meteorological Data Relay (AMDAR) programs.

The WVSS-II is fully integrated with FLYHT's AFIRS and EDGE products thereby providing real-time aircraft-based observations into FLYHT's software products.

Background

Water vapor measurement has long been the meteorologist's missing forecast element. Wind and temperature measurements are routinely made for weather forecasting, but water vapor measurement does not occur as regularly. The US' National Oceanic and Atmospheric Administration (NOAA) weather balloons are launched only twice daily to measure water vapor, and at less than 100 sites in the United States. Consequently, in only a couple of hours, sudden atmospheric instability induced by water vapor can make the data collected by these balloons unusable.

Hence, aircraft-based observations (ABO) are increasingly providing soundings at locations and times when weather balloon information is not available.

To date, WVSS-II sensors have been deployed on 139 aircraft in the USA, under partnership with Collins Aerospace Systems, United Parcel Service (UPS) airlines, and Southwest Airlines (~111 aircraft). In Europe, nine aircraft have been equipped with WVSS-II under partnership with Lufthansa Technik and Lufthansa Airlines.⁹

WMO is satisfied that these results, and the stability and reliability of the development and manufacturing programme of the supplier (backed by the support of the FAA and NOAA) provides confidence to continue with a programme of global sensor deployment, with the cooperation of airlines and the aviation industry.¹⁰

Impact on FLYHT

The WVSS-II product enhances FLYHT's existing weather business by adding additional hardware, integration and eventually recurring revenue sources to its existing Tropospheric Airborne Meteorological Data Reporting (TAMDAR) and Aircraft Meteorological Data Relay programs.

FLYHT already has exposure to aircraft weather via its TAMDAR system. TAMDAR equipped planes fly into nearly 200 airports across the globe, with high density across the United States, Mexico and Asia. With this extensive installation base, the sensor collects thousands of highly detailed and accurate readings from the upper atmosphere each day measuring:

- Ice presence
- Static pressure and pressure altitude
- Air temperature (Mach corrected)
- Variable sampling rate
- Relative humidity
- Indicated and true airspeed
- Winds aloft
- GPS position and time

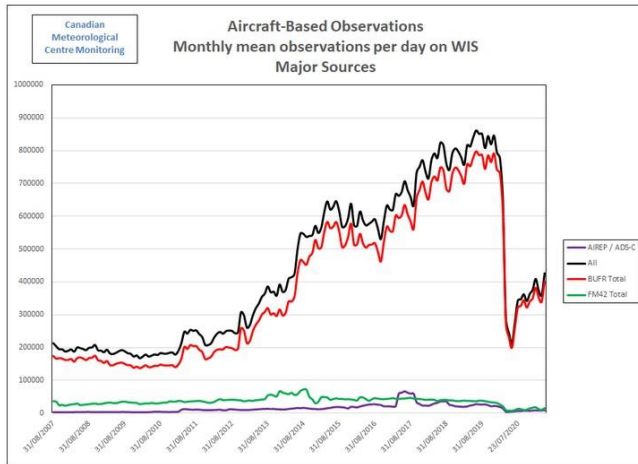
⁹ World Meteorological Organization, The Benefits of AMDAR Data to Meteorology and Aviation, Technical Report 2021-1, p75

¹⁰ World Meteorological Organization, The Benefits of AMDAR Data to Meteorology and Aviation, Technical Report 2021-1, p75

Below, we include selected extracts from WMO Aircraft-Based Observations Newsletter (Volume 21, April 2021) ¹¹ which highlight several points as they pertain to FLYHT.

Aircraft-based observations (ABO) have decreased as appropriately equipped aircraft were grounded due to COVID-related flight restrictions.

Figure 13: ABO monthly mean observations/day



Source: <https://community.wmo.int/activity-areas/aircraft-based-observations/newsletter/volume-21#article-9>

FLYHT’s weather data revenue is derived primarily from AirAsia and NOAA. FLYHT’s weather revenues are included in its SaaS revenues which showed 34.5% growth YoY in Q1/23.

However, the strategic importance of the WVSS acquisition cannot be appreciated without understanding that there are currently only three sources of ABO (AMDAR¹², WVSS and TAMDAR), and FLYHT now owns two of these sources (WVSS and TAMDAR) with WVSS and TAMDAR being the only sources of relative humidity.

There are only 148 aircraft worldwide that contribute to water vapour measurements (Figure 14). The two largest contributors to the North American number are Southwest Airlines and United Parcel Services (UPS). Rockwell Collins derives the revenues from these installs.

Figure 14: WVSSs-II installs for ABO

Operational WVSS-II Units in Service to ABOP, by WMO Region							
Region:	Africa	Asia	So. America	No. America	SW Pacific	Europe	Global
WMO RA:	I	II	III	IV	V	VI	Total
WVSS-II Aircraft:	0	0	0	139	0	9	148

Source: <https://community.wmo.int/activity-areas/aircraft-based-observations/newsletter/volume-21#article-9>

The WMO is highly supportive of WVSS and TAMDAR and makes the following comments in the Newsletter:

¹¹ <https://community.wmo.int/activity-areas/aircraft-based-observations/newsletter/volume-21#article-9>

¹² Aircraft Meteorological Data Relay - Modern commercial aircraft are equipped with meteorological sensors and associated sophisticated data acquisition and processing systems.

“...these in-situ upper-air observations continue to be extremely valuable in all forecast operations, especially numerical weather prediction, and provide a significant contribution to the Global Observing System.”

In addition, the Newsletter referred to the UK Met Office intending to proceed with the initial implementation of 30 WVSS-II installs on UK-based aircraft starting in 2022/2023. This is in the context of the expansion of observations necessary for the Met Office Numerical Weather Prediction infrastructure upgrades. On 30/8/23, FLYHT announced that the Met Office had placed a US\$6.9m order to fit Logan Air’s Embraer 145’s with FLYHT-WVSS-II.

With regards to TAMDAR, which is an additional source of WVM data, “...TAMDAR sounding counts are roughly a quarter of pre-COVID-19 totals and the number of daily reporting aircraft is roughly a third lower compared to pre-pandemic levels.”

Figure 15: TAMDAR installs for ABO

Operational TAMDAR Units, by WMO Region							
Region:	Africa	Asia	So. America	No. America	SW Pacific	Europe	Global
WMO RA:	I	II	III	IV	V	VI	Total
TAMDAR Installed Aircraft:	9	9	3	155	120	32	328
TAMDAR Active Aircraft:	3	2	1	80	33	8	127

Source: <https://community.wmo.int/activity-areas/aircraft-based-observations/newsletter/volume-21#article-9>

“As the airline industry begins to rebound, the largest increase in TAMDAR-equipped flights will be over the South-West Pacific and Asia regions.”

This is consistent with AirAsia recommencing international flights.

“The USA has also secured a longer-term agreement with FLHYT, inc. (sic) for continued provision of ... TAMDAR and AFIRS-AMDAR data to all WMO members following the...temporary provision during the COVID-19 pandemic.”

In summary, we believe that it is reasonable to expect:

- A hardware order for ~30 WVSS units from the UK Met Office (airline to be determined), and
- A recovery in weather-related SaaS revenues as AirAsia flights recover to pre-COVID levels.

Appendix III: FLYHT share price relative performance (12 months)

Chart 1: Share prices: FLYHT vs. 5 North American airlines at 24/06/24 (% change)

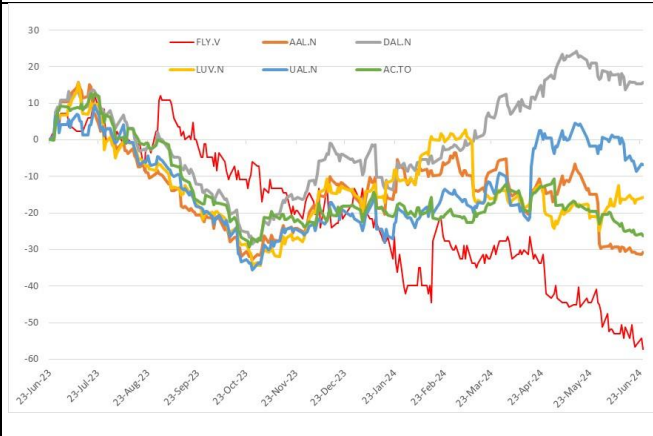


Chart 2: Share prices: FLYHT vs. average of the 5 North American airlines (proxy index) at 24/06/24 (% change)



Source: KRC Insights

Given that FLYHT’s revenue recovery is predicated on a recovery in airline travel in general, we compare FLYHT’s share price to that of five major North American airlines (American Airlines (AAL-N), Delta (DAL-N), Southwest (LUV-N), United (UAL-N) and Air Canada (AC-T)) in Charts 1 and 2. By reference to Chart 2, the FLYHT share price has **underperformed** with the average share price of this group over the past 12 months. In part this can attributed to slow AFIRS 228 sales and longer-than-expected receipt of the EDGE family of STCs.

Applying the same logic, we compared the FLYHT share price to the major airframers (Boeing (BA-N), Airbus (AIR-P) and Embraer (ERJ-N)) in Charts 3 and 4, also on a 12-month basis. FLYHT has **underperformed** the average of these airframers (Chart 4) over the past year (-57.2% vs. +27.6%). The air framer average was positively influenced by the performance of Embraer (up 92.3%) while Boeing has declined -15.1% due to the 737 issues.

Chart 3: Share prices: FLYHT vs. 3 Major Air Framers at 24/06/24 (% change)

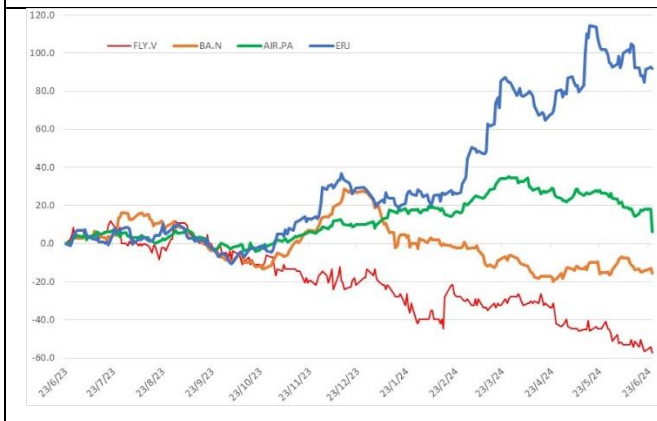
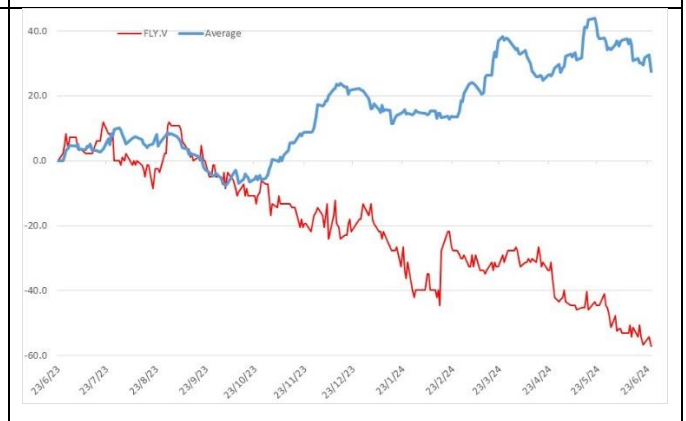


Chart 4: Share prices: FLYHT vs. average of the 3 Major Air Framers (proxy index) at 24/06/24 (% change)



Source: KRC Insights

Disclosure

- 2622632 Ontario Inc. is doing business as KRC Insights.
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