



## QUARTERLY ECONOMIC NEWSLETTER

EVE ONLINE  
2nd Quarter 2009





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## EDITORIAL

In a virtual world that is completely player-driven - including its politics and economy - it is all but guaranteed that some individuals will make landmark events happen that continue to build the amazing saga of EVE Online. Two such epic stories happened so far this year: the hugely powerful Band of Brothers (BoB) alliance was disbanded after a disgruntled director jumped sides, and the CEO of the largest bank in the game - EBank - stole billions from depositors. Both stories drew coverage from real-world international media, highlighting their virtual parallels to real-life events such as the fall of banking institutions and disgraced financiers guilty of fraud.

While these events are momentous in their own right, they are but the tip of the iceberg in terms of the total player activity in EVE. No matter how small or seemingly insignificant the player action, the cumulative effect

of all such activity has real repercussions in a single-shard virtual world. But these two events, though similar on the surface, had wildly different consequences.

Consider the EBank story: its CEO was a well-trusted character in the EVE Online community that had been playing for several years. He, along with several other well-trusted characters, recognized that there was a market for financial services in EVE. Some of the prior attempts by would-be entrepreneurs to offer these services ended up as Ponzi schemes, resulting in a low level of trust towards banking institutions in EVE. It is important to note that EVE is a closed world with much different rules than those of the real world. One example is banking. Financial institutions are not regulated by any high level authority within EVE. Deposits with banks are not insured. There is no government to

support the financial system or any lender of last resort. In EVE, anyone with the ambition to operate a bank can do so - all he or she has to do is to establish enough trust among a considerable number of players (depositors) and they are in business. However, given the Machiavellian nature of EVE itself, establishing trust with a large enough population of the player base might actually be one of the most difficult things to accomplish.

The EBank CEO and his likeminded colleagues fully grasped the trust challenge. When they established EBank, they were clear about their internal processes and how they would take precautions to ensure that no one could steal the entire bank deposits. In fact, when the bank was established, the founders provided a detailed list of terms and conditions, which among other things provided potential customers with information on how EBank

implements auditing procedures and deals with fraud. All of this was done without any involvement at all from CCP, since CCP considers the world to be player-driven - and EBank was a service provided by players for other players.

**“we have very creative and innovative player base, and among them are individuals determined to infiltrate their enemies’ corporations. It’s part of war and conflict in EVE, and as long as those methods are within the rules of the game, CCP will never intervene.”**

And then the EBank CEO changed his mind. The reasons for his change of intent are outside the scope of this report, but have been

covered at length in the media and on the EVE forums. In short, he decided that he wanted to steal whatever he could from EBank, and so he did. Taking the money out of EBank's accounts was not against the in-game rules of EVE Online. In fact, any player can steal from their own corporation without being banned from the game. However, the EBank CEO stole depositor money in order to sell it for real life money. Selling in-game currency for real life money is expressly forbidden according to the game rules, as defined in the EULA and Terms of Service. When he started to sell off the stolen money, his accounts and all associated accounts were shut down, temporarily halting EBank operations. There was understandable concern amongst depositors, but CCP's stance was clear: this is an in-game entity and any issues relating to it must be dealt with by the players themselves.

The depositors, who had trusted EBank and its directors, now had to face the situation and decide if that trust was broken. As it turns out, EBank was capable of withstanding the initial bank run because the CEO only got away with a portion of the total funds. Within days, the remaining directors reopened their business and, according to their website, are still viable. The situation was solved entirely by the players themselves.

Overall, the impact of this scam on the entire EVE economy was negligible. Although EBank is the largest player-driven bank in EVE, its worth is small compared to the overall economy. But the event's global notori-

ety and the fact it recorded any impact at all is possible only because of the single-shard foundation of EVE Online, where all players interact on the same cluster of servers and thus within the same economic and social environment.

Despite the differences in rules between EVE and the real world, there are lessons to be learned from the EBank scandal which are applicable to both. The most valuable one is that trust is vital for the survival of any organization. In addition to proactively building and maintaining trust between institutions and clients, there must also be processes to effectively regain trust if or when breaches occur. We need look no further than the real-life governments of the world today to see this lesson in practice, as most are dealing with the aftermath of the near collapse of the financial sector and uphill climb ever since as markets and consumers struggle to regain confidence in the system. As of now, the question still remains open for both real life financial institutions and EBank: will they be able to regain the trust of their depositors and investors in the long run?

We certainly expect more interesting stories to emerge from EVE. The reason is because we have very creative and innovative player base, and among them are individuals determined to infiltrate their enemies' corporations. It's part of war and conflict in EVE, and as long as those methods are within the rules of the game, CCP will never intervene. There is never a dull moment in EVE.



## DEMOGRAPHICS

### POPULATION

The EVE Universe continued to grow in Q2 2009. This quarter marked a big milestone as the population hit 300,000 in early May, six years from publication of EVE Online.

The main reason for this increased growth was the successful release of Apocrypha on March 10th, 2009. The expansion drew significant attention to EVE Online, attracting both new players and older vets returning to the game. A totally refurbished new-player experience was introduced, in addition to more advanced gameplay such as wormhole exploration, providing a well-rounded set of features for broad appeal. As of June 2009,

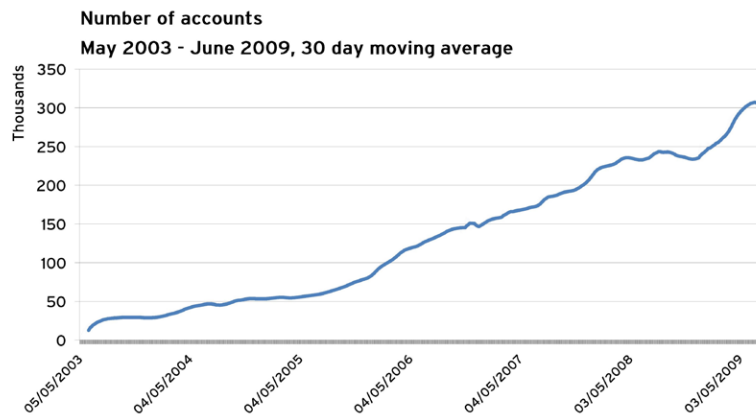
there are about 620,000 characters represented on the 300,000+ subscription accounts for EVE Online, or just about 2.1 characters per account on average.

Despite global economic turmoil, 2009 has been a good year for EVE Online. Much is planned for the second half of the year, such as the winter expansion and Apocrypha 1.5. This patch will add features which include different sized rigs, new epic arc missions, specialized cargo holds, and Factional Warfare improvements. From an economic standpoint, the new rig system and new cargo holds are very interesting and could add new

dimensions to logistics and warfare, the two main driving engines of the EVE economy. The new rig system will increase demand for rig components, and is thus likely to cause fluctuations in that market. The specifics of cargo holds are not yet fully defined, but allowing for more specialization usually leads to increased competition in the markets associated with that specialization. Once the details are released, we can expect to see the markets for affected items adjust very quickly, since the markets in EVE have proven to be highly efficient in disseminating information. Be sure to follow any announcements on Apocrypha 1.5, which you can read all about in this [devblog](#) from CCP tOrfiFrans.

### INTERSTELLARKREDIT (ISK)

Currently there is more than 300 trillion ISK on all accounts within EVE, of which 170 trillion are on active paying accounts. In the [last QEN](#), we discussed the amount of ISK in each wallet per account, and observed that it had increased from 300 million to 500 million ISK per account. To further analyze the distribution of ISK we examined ISK in wallets for each character and compared the data to total login minutes. To make the analysis with only the most active players, we took a snapshot of characters with more than 1,000 login minutes. By doing so we filtered out newcomers without excluding the most frequently used alternative characters used for market transactions. Not surprisingly, the data shows that the amount of ISK per wallet rises with playing time. The average ISK per character wallet varies from 46 million ISK for players with 1,000 - 1,500 login minutes, to 1.1 billion ISK as the character reaches the 100,000 minute mark. The average time playing per character was 2.4 hours a day in May. Average ISK per wallet takes a significant jump once players pass 15,000 login minutes, which means that after approximately 100 days of playing the average character has more than 200 million ISK.



**Figure 1:** Historical population growth in EVE from launch until the end of June 2009. The graph shows the 30 day moving average of active paying subscribers. EVE hit a new record high when it crossed the 300,000 subscriber mark in early May - and still continues to grow.

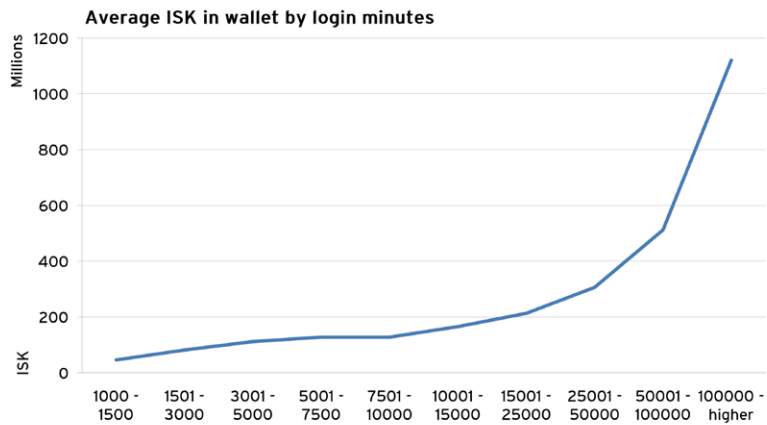


Figure 2: The following graph shows the average ISK per wallet per character by login minutes. When players reach 15,000 login minutes or more, the amount of ISK per wallet per character starts to grow at an exponential rate. We excluded characters with under 1,000 minutes in order to exclude rarely-used alternative characters and new players.

Looking at Figure 2 we can see the average ISK per wallet per character is positively correlated with login minutes. However, they seem to hit resistance in ISK accumulation at the 7,500 minute mark, with ISK per wallet not increasing to any significance. The largest jump in ISK per wallet is between the 50,001 and 100,000 marks. Past 100,000 is where the ISK per wallet doubled.

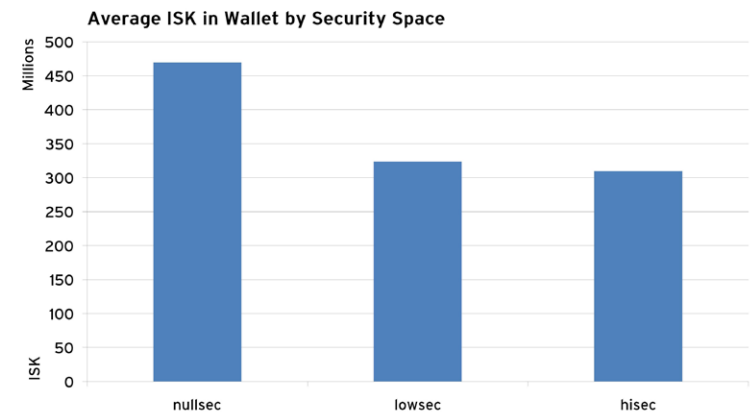


Figure 3: The following graph shows the average of ISK per wallet per character by security space. Characters with less than 1,000 minutes logged were excluded to filter out little-used alternative characters and new players.

Another interesting statistic is the ISK per wallet by security space. The highest amount of ISK per wallet per character is in nullsec space, with the average character holding 470 million ISK. Players in hisec and lowsec space have similar amounts, but with lowsec slightly higher. The high amount of average ISK in nullsec can account for the replacement cost of ships due to nullsec warfare and piracy. It is surprising to note that there is hardly any difference between lowsec and hisec.



## SUMMARY

To further analyze player behavior, we examined the distribution of characters in space grouped by solar system security ratings and login minutes. Figure 4 shows that players with 1,000 - 1,500 login minutes had fewer of their characters in hisec than compared to characters with 7,500 - 10,000 login minutes, but the difference between these two groups is not large. Players with 100,000 or more login minutes had 53% of their characters in hisec and 32% in nullsec space, which shows that the most experienced players tend to seek nullsec space to a much higher degree than those with less experience. What is intriguing is that the most experienced players are concentrated primarily in hisec or nullsec space, while lowsec only accounts for 14% of their population.

By observing the distribution of monetary wealth and location of characters, it becomes apparent that the wealthier the player is, the more likely that player resides in nullsec space. In addition, examining login minutes and ISK per wallet tells us that more playing time generates more money and at an exponential rate. The more money players have, the more able they are to replace ships that are lost in combat. This allows more experienced players to venture into nullsec space, which in turn leads to our finding that there is more ISK per character in nullsec space than elsewhere on average. However, the majority of EVE players are located in hisec space, or 70% of the total number of characters. Thus, most ISK is located in hisec. The least amount of ISK is located in lowsec space, where only 13% of EVE characters reside.

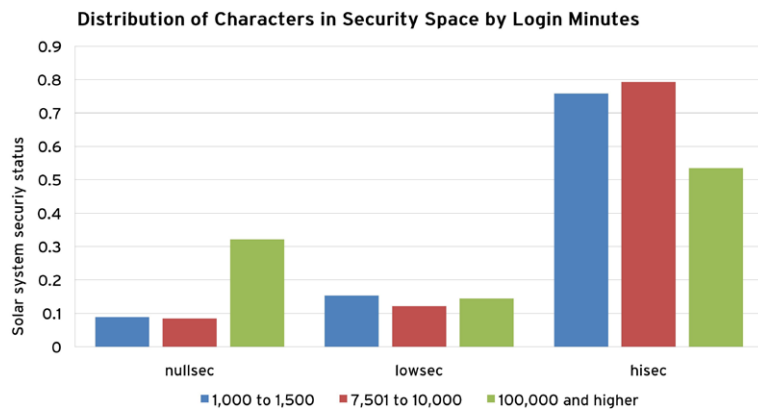


Figure 4: Shows the distribution of characters in different security spaces by login minutes. We excluded characters with less than 1,000 minutes of login time in order to filter out little-used alternative characters.

## SHIP TYPES BEING USED

Ship usage has changed significantly since Q3 2007. This data is captured at the very end of the quarter, and shows a 'snapshot' of what ships were being flown at that time. At the end of Q3 2007, the most popular ship was the Raven. At the time, Ravens made up 10,722 of the 433,747 active ships, or 2.47% of all active ships. The Raven is now the sixth most popular ship, with only 8,380 of them active, or just 1.27% of current active ships.

		No. of ships	
1	Hulk	14,967	2.28%
2	Drake	12,954	1.97%
3	Kestrel	11,937	1.81%
4	Rifter	10,964	1.67%
5	Retriever	9,074	1.38%
6	Raven	8,380	1.27%
7	Bestower	6,906	1.05%
8	Punisher	6,836	1.04%
9	Catalyst	6,827	1.04%
10	Dominix	6,800	1.03%
Rookie ships, shuttles and capsules		236,218	35.91%
Other		325,946	49.55%
<b>Total</b>		<b>657,809</b>	

Table 1: Top 10 most popular ship types, with number of active ships and the percentage share of total active ships. The Hulk has increased in popularity considerably since Q3 2007, while the Raven has fallen from first place to sixth.

The Hulk has climbed to first place, making up 2.28% of active ships, compared to 1.35% in Q3 2007. Interestingly, ships traditionally used by newer players such as the Retriever, Punisher and Catalyst have appeared on this list, with the Rifter increasing its share from 1.55% to 1.67%. This is consistent with the influx of new players to EVE following the Apocrypha expansion.

The Retriever has joined the Top 10 list for the first time, with 9,074 ships, or 1.38% of all active ships, compared to 11th place with

1.06% last time. The increased usage of the Hulk is also noteworthy, considering that industrial ships in general have dropped in usage, with the Iteron Mark V and Badger Mark II falling off the list. The reason is likely the introduction and considerable popularity of the Orca, a mining support ship that outperforms industrials in the role of supporting mining operations. There were 4,028 active Orcas at the end of Q2 2009, representing 0.61% of all active ships. Exhumers and Mining Barges made up 4.43% of all active ships compared to 3.38% in Q2 2007.



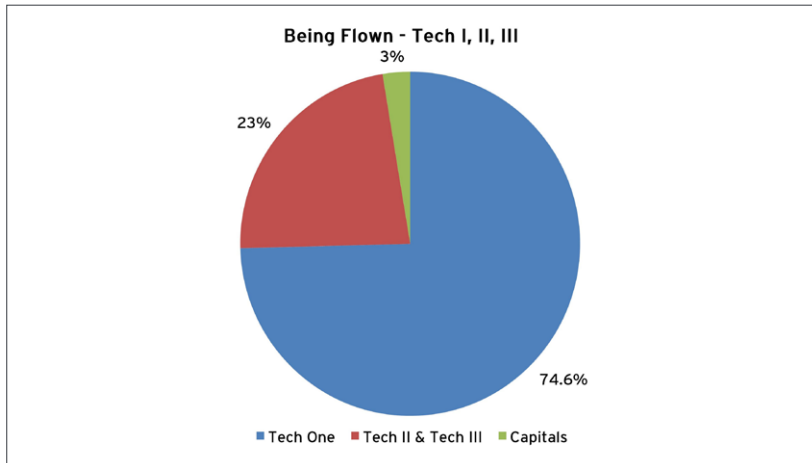


Figure 5: Ships being flown, broken down into technology levels and capitals. This excludes rookie ships, shuttles and capsules.

In Figure 5 we break down which ships are currently being flown into three categories - Tech I sub-capitals, Tech II & III, and capitals. As expected, Tech I ships are by far the most popular, making up more than 75% of all active ships.

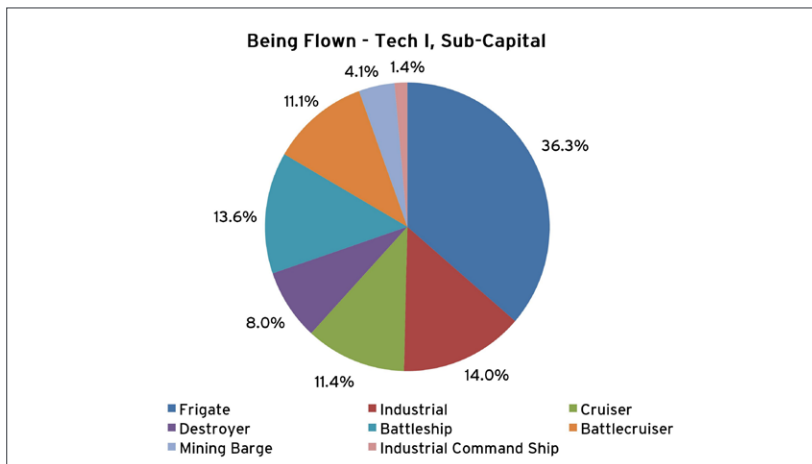


Figure 6: Tech I ships being flown, broken down into ship classes. Frigates were the most popular ship other than capsules, rookie ships and shuttles, which were not included.

Interestingly, there were more active industrial ships (14.05%) than battleships (13.62%) at the time this snapshot of active ships was taken. Battlecruisers were at the time of the snapshot almost as popular as cruisers, with a share of 11.09% of all active Tech I ships. However, Tech I mining barges only accounted for 4.07%, which can be explained by the Hulk needing very few additional skill requirements than the most efficient Tech I mining barge, the Covetor.

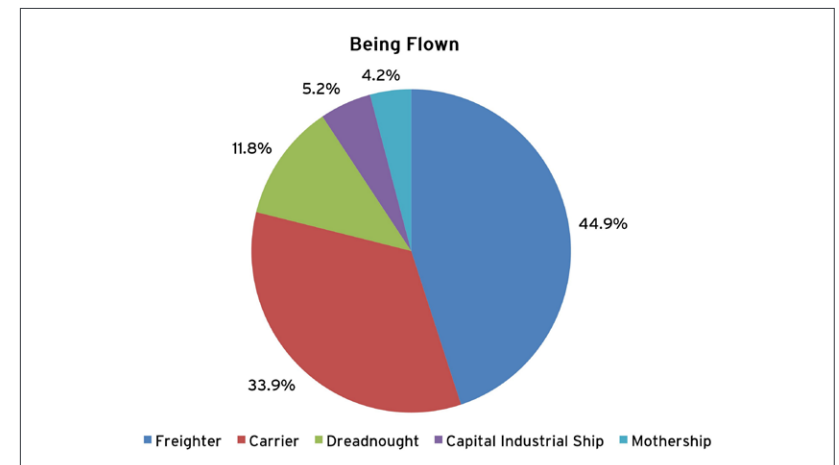


Figure 7: Capital ships being flown, broken down into ship classes. Titans were omitted since few of them exist in them game and they have a very significant strategic role. Carriers accounted for over a third of all capital ships being flown, with almost three times as many of them active than Dreadnoughts.

Due to the strategic value of Titans, and the limited numbers of those spaceships within the game, we have not included them in Figure 7. Freighters make up the largest portion of capital ships, with 4,301 being flown at the time this data was recorded. The high proportion of freighters is not surprising due to their ability to be operated in high security space and their vital logistic role in transporting goods throughout EVE. Carriers came second with 3,246 being flown, which can be attributed to their usefulness in a large variety of roles - PVP (Player vs. Player), transporting ships and items, and even PVE (Player vs. computer generated Environment).

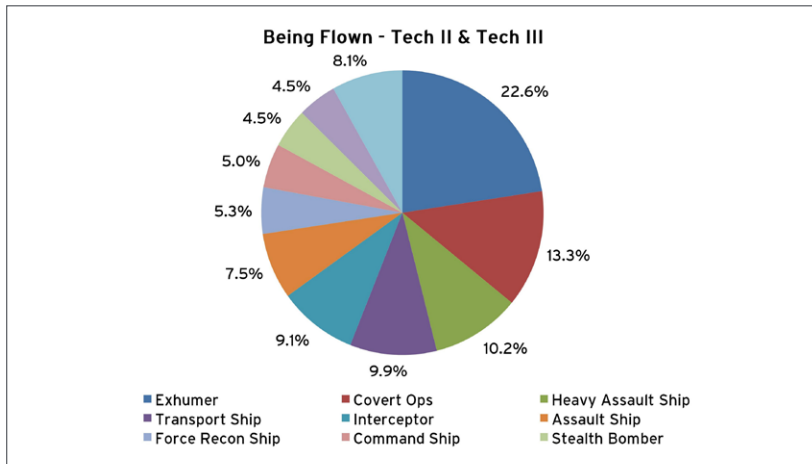


Figure 8: Tech II ships being flown, broken down into ship classes. There are 18 different classes of Tech II and III ships, with extremely varying degrees of usage.

Exhumers are by far the most popular of the Tech II and Tech III ships, with 17,774 pilots having them as their active ship. Exhumers are the most efficient mining vessels in EVE: the Hulk is the best at mining ore, the Mackinaw at mining ice, and the Skiff at mining Mercorbit. The class with

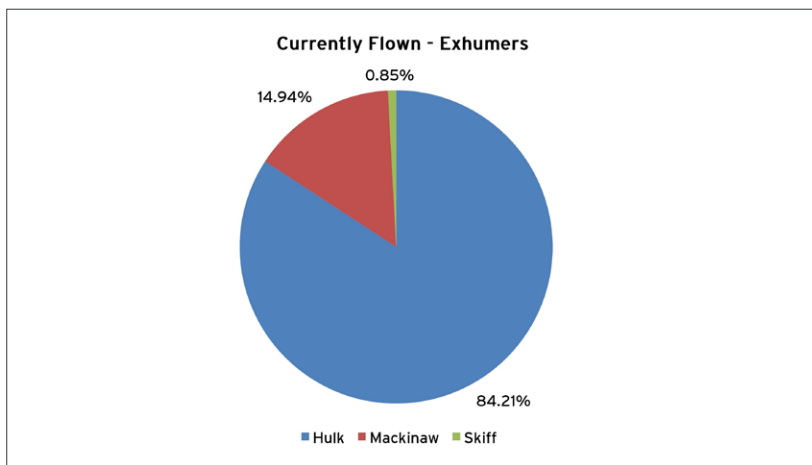


Figure 9: Exhumers being flown, by type. The Hulk is the ship type with the highest number of active ships in the game, and it accounts for 84.21% of all active exhumers.

the least number of pilots was the Black Ops battleships, with only 208 being flown. Black Ops are being looked into by the game design team, with a fuel bay being added in the future. You can read about this in this [devblog](#). Marauders were only in use by 3,519 pilots - a number that was expected to be significantly higher given their efficiency in PVE environments.

The Hulk accounts for 84.21% of all active exhumers. As mentioned previously, it is popular because it is the best ore mining ship in the game. The Skiff - used for deep core mining to mine mercorbit -accounted for only 0.85%.

The Nighthawk is by far the most popular command ship, accounting for 42% of all active command ships. The total number of active command ships was 3,955. This is largely attributed to the popularity of the Nighthawk in a PVE role.

### SUMMARY

Overall, there has been an unexpected shift towards mining vessels since Q3 2007. The most likely reason for this is the introduction of the Orca, which would also explain the drop in Industrial ship usage. The Orca allows many mining groups to reduce the number of industrials needed for hauling operations in favor of a small number of Orcas, enabling them to bring greater numbers of mining ships. At present, one in every 164 active ships, or 0.61%, is an Orca, which is a large number for such a specialized ship.

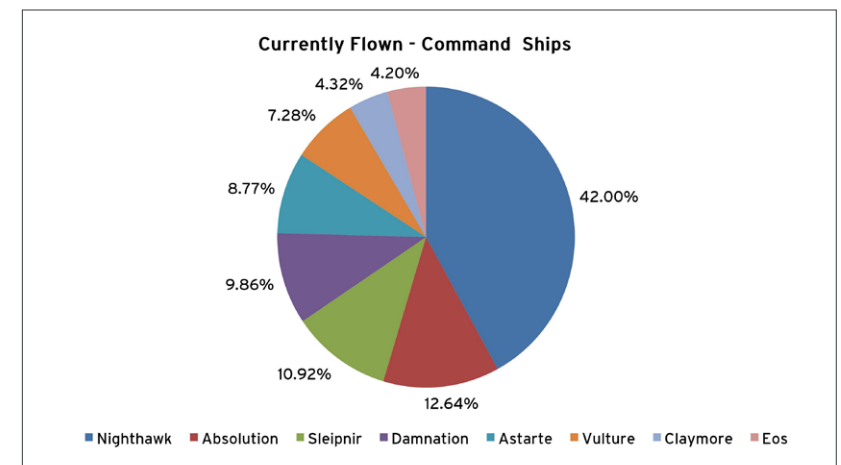


Figure 10: Command ships being flown, by type. The Nighthawk is by far the most popular command ship.

## PRICE LEVEL CHANGES

### MINERAL PRICE INDEX (MPI)

The Mineral Price Index (MPI) shows the price changes in all eight minerals used to produce ships and other items in EVE. The index is calculated as a Laspeyres index in which the base is updated monthly based on trade in the previous month.

Overall we see the “aftershock” of the Apocrypha expansion reflected in mineral prices in Q2. In Q1 2009 mineral prices rose due to increased overall demand that could be seen through increased trade in January and February (see QEN Q1 2009 for further analysis on [quantity traded](#)). In Q2 the price of minerals started to decline again, with mild price inflation in April and May becoming considerable deflation in June.

Although this pattern is often repeated around expansions, it has lasted unusually long this time around. This particular trend began two months before the Apocrypha launch and lasted for two months after. This may be due to significant pre-launch anticipation and the overall success of the expansion.

Examining price and volume changes in more detail reveals that quantity traded of each mineral increased throughout the quarter, with prices declining for most of the minerals. Further details on individual minerals are provided in the following sections.

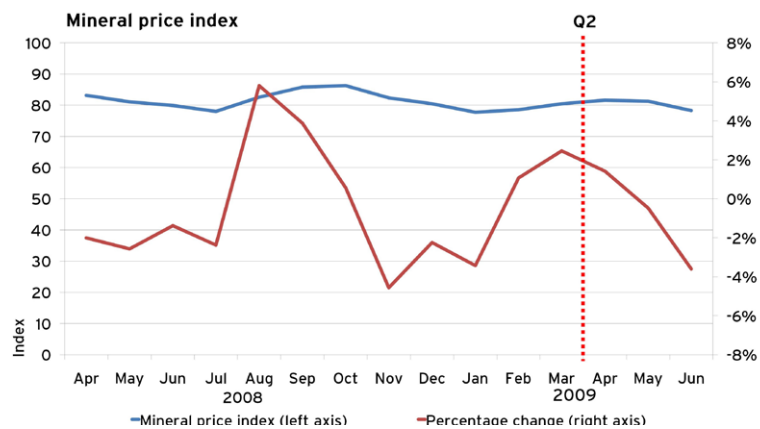


Figure 11: Mineral Price Index (MPI) from April 2008 through June 2009. In the beginning of Q2 there is a mild inflation in mineral prices which turns to considerable deflation in June 2009.



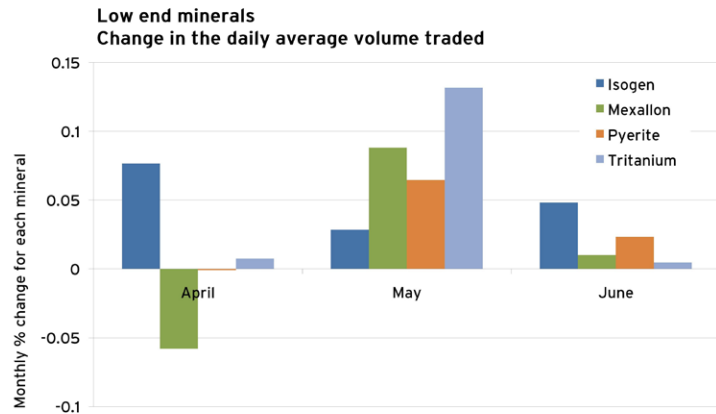
## LOW END MINERALS

Trade in Isogen and Tritanium increased each month in Q2 2009. Traded volume for Isogen increased from 18.5 billion units in April, to 19 billion in May and 19.3 billion in June. At the same time, prices declined steadily as well, from 55.91 ISK per unit on average to 50.54 ISK per unit. For Tritanium, the traded quantity increased from 1.14 trillion units in April to 1.29 trillion units in May, and 1.30 trillion units in June. The greatest increase was between April and May (13%), but prices only decreased by 4% in the same period and continued to fall in June. Overall, the trade volume of low end minerals increased during Q2 2009.

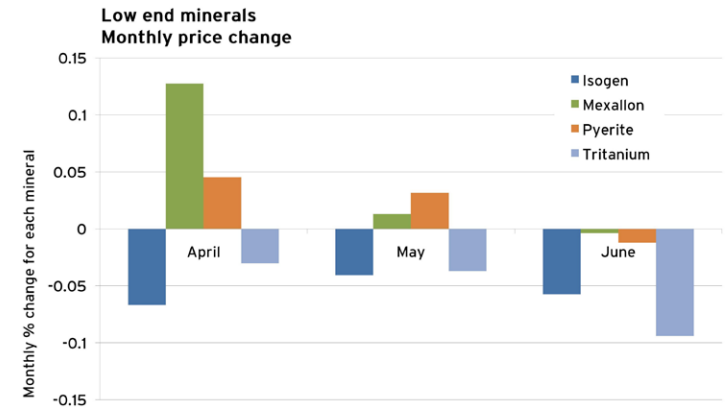
During this same time period prices decreased for two low end minerals (Isogen and Tritanium) while staying relatively stable for

Pyerite and Mexallon. Figure 13 shows the monthly price change for each of the four low end minerals during Q2 2009.

Quantity traded is increasing at a faster rate than demand, thus prices are declining in general. The increase in popularity of the Hulk is therefore interesting in this context. There are more mining barges in the game than ever before, in addition to a considerable increase in the number of missions run by players and NPC kills. Since a sizeable part of all minerals in the game come from refined loot, the increased supply of minerals, along with lower prices, is most likely attributed to these two causes. PvP activity is at the same level as before and thus not a contributing factor to this trend.



**Figure 12:** Percentage change in the daily average trade volume of low end minerals. Daily trade volume for Isogen and Tritanium increased consistently over Q2. Pyerite and Mexallon trade volume fell in April but rose again in May and June.



**Figure 13:** Prices of Isogen and Tritanium decreased during Q2, while the price of Pyerite increased slightly overall, followed by a small price decline in June. The price of Mexallon increased by 13% in April and then stabilized.

## HIGH END MINERALS

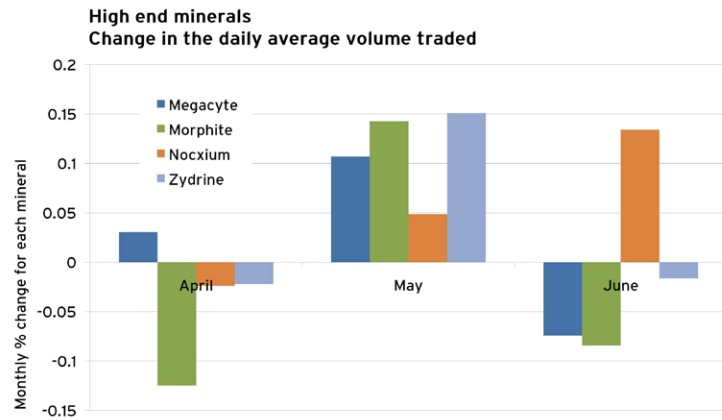


Figure 14: Percentage change in daily average volume trade in high end minerals. Trade increased significantly in May while declining in April and June.

There was much more fluctuation in the trade volume of high end minerals. In April, Megacyte trade increased by 3% compared to March, increased again by 11% in May, but then declined 7% in June. However, all high end minerals increased in trade in May, most by 10% to 15%. In June it was only Nocxium that increased in price, while other high end minerals decreased in price by 2% to 7%.

The increased trade in May did not have a significant impact on price. The price of Megacyte and Zydrine declined by 2% and 4% respectively, which was far less than the price decrease in May of 10% and 8%. There seems to have been relatively increased demand for high end minerals in May compared to April and June. No single effect could be found to explain this increased demand in May. The price changes for high end minerals are shown in Figure 15.

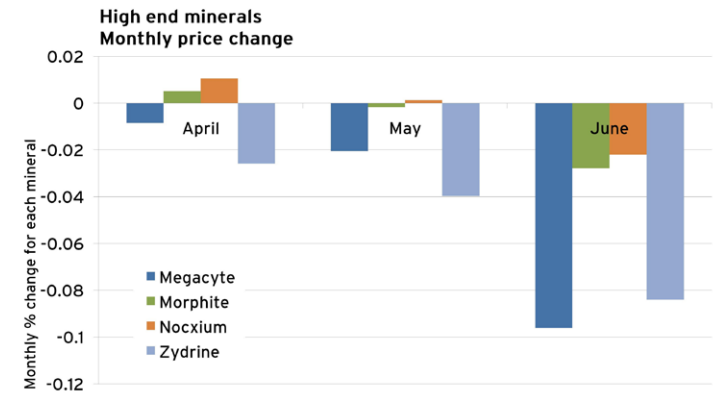


Figure 15: This figure shows the average price changes for high end minerals during Q2 2009. Prices declined during the later part of the quarter, with only minimal price increases in Morphite and Nocxium in April.

The price of Megacyte and Zydrine declined steadily over Q2. Prices for Morphite and Nocxium increased in April but then decreased at a lower rate than Megacyte and Zydrine.



## PRIMARY PRODUCER PRICE INDEX (PPPI)

The Primary Producer Price Index includes Datacores, Drone Compounds, Raw Moon Materials, Processed Moon Materials, Advanced Moon Materials, Data Interfaces, and Prototypes. There are 360 individual items included in this index, which is a slight increase from last quarter due to new Tech III items that are now included.

During Q2 2009 the PPPI increased from 81.4 to 85.1, or by 4.5% from April through June. The PPPI is the only index that increased in all months of Q2.

Most of this price increase can be attributed to increases in price for advanced moon minerals. In April, advanced moon minerals accounted for half of all price increases in this category (2.4% points out of 4.8% point

increase). In May, advanced moon materials increased more than the index itself, but due to price decreases in most other categories the index increased by only 0.9%. In June, advanced moon materials again accounted for more than half of the entire increase in the PPPI index.

Moon materials of various types and states are a necessary ingredient in most Tech II production. The items that are increasing the most are Ferrogel, Fermionic Condensates, and Prometium. All of these require raw moon materials that are in scarce supply. With the population of EVE growing and the resulting increase in demand for Tech II items, the price for moon materials continues to increase, raising the profitability of alchemy at the same time.

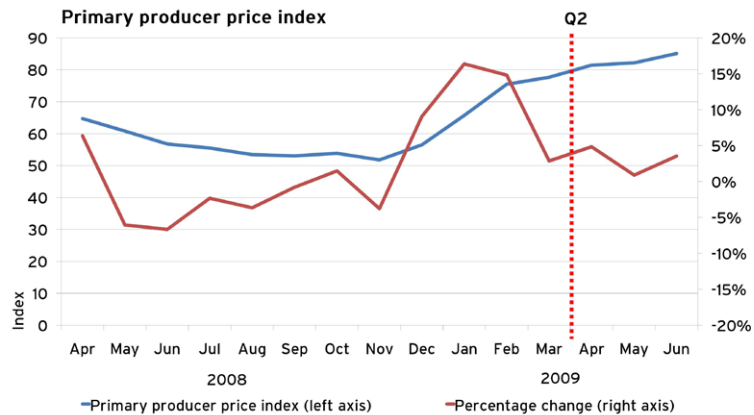
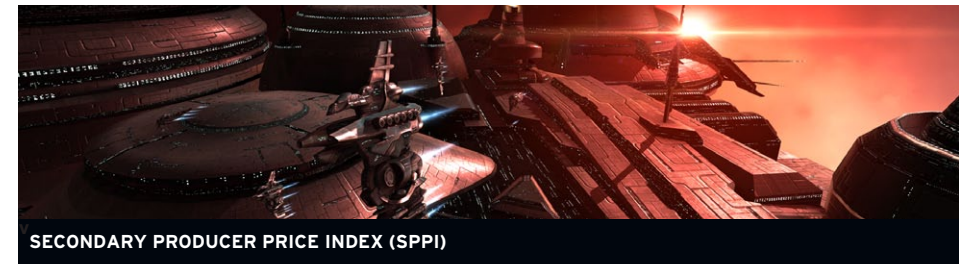


Figure 16: The Primary Producer Price Index includes 360 items. This index is the only price index that increased consistently throughout Q2 2009.

Other items in this index fluctuated in price during Q2 of 2009 instead of following a steady price path, indicating relative stability in those markets. The only exception from

that were Sleeper relics, which overall decreased drastically in price, but due to its low trade volume did not have significant impact on the PPPI.



## SECONDARY PRODUCER PRICE INDEX (SPPI)

Secondary production refers to production stages where the final output can be used directly for consumption - such as ships, ammunition, or any type of modules that can be fitted onto a ship. There are 1,156 items in the SPPI.

After a six month period of price increases for the Secondary Producer Price Index (SPPI), prices started to decline around mid Q2. The index declined in value from 92.7 to 90.7 throughout the quarter, or a 2.2% decline.

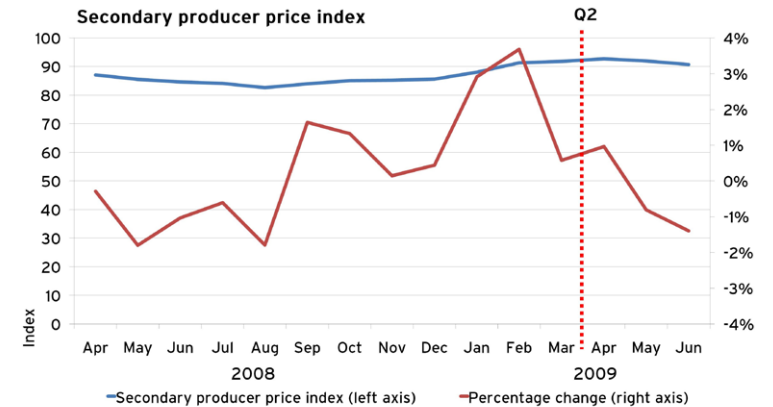


Figure 17: The secondary producer price index declined in Q2 2009.

**CONSUMER PRICE INDEX (CPI)**

There are two main reasons for this price decline. First, there has been a general price decline in salvage material. Since salvage material stands for a third of all trade within this index, its impact on the index is substantial. Second, there is a significant drop in the price of Tech III components, which are now becoming more available since more pilots are venturing into wormhole space to retrieve the materials necessary to produce them. This price declined started in May and continued throughout June.

Of particular interest is the Neurovisual Input Matrix, which declined in price by 19.5% in June. Since this is a highly priced item that sold in large volumes, it had a considerable impact on the SPPI in Q2, and by itself was responsible for -0.2% of the total -1.4% decline for the index. The salvage items that dropped the most in price in June were Burned Logic Circuits and Fried Interface Circuits.

During Q2, the Consumer Price Index declined from 65.7 to 64.9 in May. These are relatively small changes during the quarter, but still a notable change from Q1, when prices had been increasing throughout that quarter. Prices continued to increase in April, but declined in May considerably.

For this analysis, the CPI is split into several different categories. Some of the major categories are Tech I ships and items, Tech II ships and items, Fuel, attribute implants, and Tech III ships and subsystems.

Prices in the Tech I ship category were relatively stable throughout the quarter, rising slightly in April but having little impact on the overall index (0.02% point). In May, prices declined slightly, again with minimal impact

on the overall index (-0.02% point). And finally, in June prices for Tech I ships fell again slightly. So overall, the price for Tech I ships generally declined during Q2 2009, but at a relatively low rate.

The story is different for Tech II modules and Tech II ships. Both increased in price during Q2 of 2009, with the exception of Tech II modules in May. Tech II ships increased by 4.05% in April, 1.31% in May and 3.71% in June. This difference in price development between Tech I and Tech II demonstrates that there are different market forces affecting each category. In the Tech I market, there are relatively low barriers to entry, requiring just a blueprint and minerals or just loot from NPC kills. Thus, there are many participants in that market. As a result, profit margins

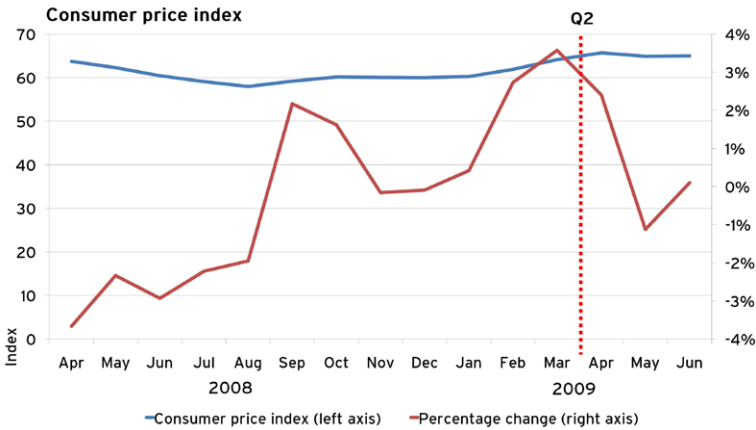


Figure 18: The consumer price index for Q2 2009. The index declined over the quarter, with the largest decline in May. This resulted in mild deflation in the second part of Q2.



are low, competition is fierce, and prices generally decline because there is no absolute shortage of the materials necessary to produce Tech I items. Local shortages are the exception, which are quickly filled by arbitrage trading.

On the other hand, the barriers to entry in the Tech II market are considerably higher, requiring greater skills, significant capital costs (the price of Tech II blueprint originals is extremely expensive), and a much more elaborate production pipeline. There is also a shortage of certain high end moon materials, since very few moons contain materials needed to manufacture these items. This has given the moons themselves immense strategic value and is a major driver of conflict in EVE. Adding to all of these pressures is the increasing number of EVE pilots obtaining the skills to use Tech II items, creating even more demand. We can thus expect to see Tech II prices continue to increase over the next quarter.

The item that affected the CPI the most in June was Pilot License Extensions, or PLEX. PLEX prices increased rapidly during that month, selling for more than 400 million ISK at its peak. Since then, prices have fallen somewhat, and we expect those prices to stabilize again between ISK 300 to 350 million mark. (PLEX) PLEX has become a major trade item in EVE because it creates an efficient market for players to exchange subscription time for in-game currency. This enables players that spend a lot of time in EVE to pay for their subscription using Inter Stellar Credits (ISK). Players that do not have as much time can exchange subscription time for the same ISK. This system therefore supports both hardcore and casual players, allowing them to fund and play the game according to their needs. The system does not create any new ISK or items. It just increases the velocity of cash that is already in the game. This promotes higher turnover in the EVE market, helping to increase demand and making markets more efficient overall.

## SUMMARY

In general, prices were relatively stable in EVE during Q2 2009. We did detect some mild deflation in the system, specifically in the months of May and June, but that is most likely due to the regular expansion “hang-over” following increased economic activity around the Apocrypha expansion.

To summarize we can state that the EVE economy is healthy. There is mild deflation, but with the increase in economic activity there are good prospects for continued economic growth for the rest of the year.

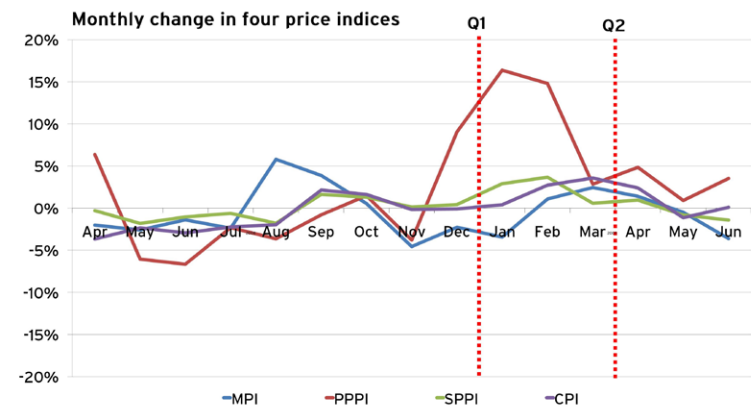


Figure 19: Overview of the monthly change in all four price indices. Q2 2009 shows relative stability with a slight downward trend in prices for all four indices. The effect of the Apocrypha expansion is clearly visible by looking at the price increased in the PPPI, SPPI and CPI from February through April.



## TECH II PRODUCTION

### OVERVIEW

Tech II is an improvement on a Tech I ship or module, providing greater or additional bonuses than its lower tech counterparts. It was introduced seven months after the launch of EVE Online, in the Castor expansion of December 2003. At the time, very few of these items were available. Today, there are Tech II versions of almost every item and ship in the game. In this section, we will examine the Tech II production pipeline - where players are building these items, and which blueprints players are using.

When it was first released, the only way to produce a Tech II item was to own an original blueprint of the item, or acquire a copy of one. The original blueprints were distributed in a lottery system in which players accumulated points with an agent by running a research project with them. Points were gained passively over time (a set number per day), which could be doubled by running daily missions. These resembled lottery tickets in that having more of them giving you a better chance to “win” the blueprints in the field of research. This system is still in place today,

although instead of awarding blueprint originals, it awards datacores, which are used in the invention process.

Only a limited number of blueprint originals for each item were released into the lottery system. Thus, with increasing numbers of players entering the game, it was impossible for producers to keep up with demand. This resulted in soaring prices for Tech II ships and modules.

Invention was introduced as a solution to counter this. Invention allows the player to “reverse-engineer” and produce Tech II equipment, but with much less production efficiency (and higher costs) than owning an original blueprint. With the required skills and input materials, it is now possible for any player to “invent” Tech II blueprints for any Tech II item. You can find out more about the invention process in this [dev blog](#).

Once the blueprint is acquired, actual production of Tech II items is significantly more complicated than normal Tech I production.

The required skills are much higher - requiring three or four additional skills (three for modules, ammunition and drones, four for ships). Numerous types of materials are needed, unlike most Tech I items that only require minerals to produce. These include:

**Construction components.** These make up the bulk of the required materials. These are created by harvesting materials from moon mining and processing them using reactor arrays on starbases, and then producing the components from these materials through the standard manufacturing process.

**Morphite.** An advanced mineral that comes from mining Mercoxit in nullsec space or by refining certain rogue drone alloys.

**Robotic Assembly Modules (R.A.M.)** These are specialized tools used in the production process. They take limited damage per run, and if they reach 100% damage they are destroyed.

**Tech I base item.** The Tech I version of the item is required in the process, so to create Tech II ammunition, you need its Tech I equivalent.

**Trade goods.** Different trade goods are needed to produce different items, and these can be purchased from NPC corporations. For example, all Tech II ships require Construction Blocks as part of the production process.



## GENERAL STATISTICS ON TECH II PRODUCTION

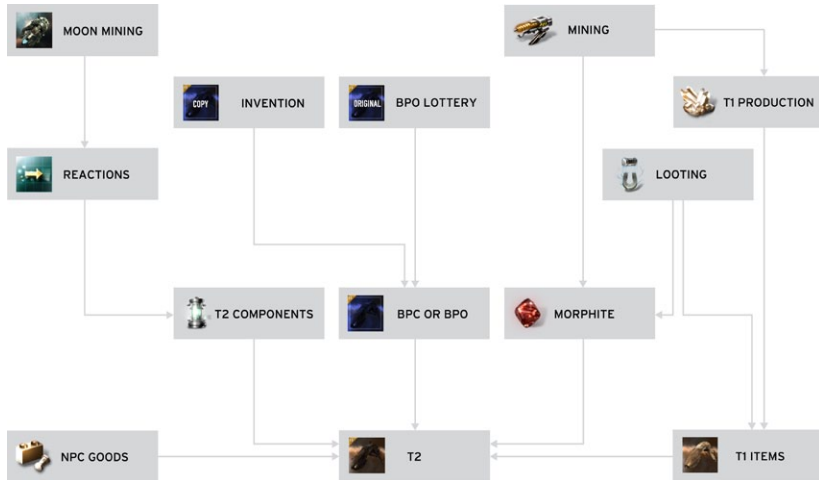


Figure 20: Flow chart showing the major steps in any Tech II production. Almost all of these steps can be considered professions in their own right.

The flow chart in Figure 20 shows the major steps in the production of Tech II items. Most of these steps - such as mining, Tech I production, moon mining and invention are their own professions. Large numbers of players specialise in these professions, without necessarily following through to the final stage of production. The single world nature of EVE Online encourages players to specialize in certain areas, allowing them to focus on their areas of interest and still remain part of the Tech II production process and the EVE market.

During Q2 2009, the average number of Tech II production jobs completed daily was 11,788.. Out of this average, 374 jobs were installed with a Tech II BPO, while the remaining 11,414 jobs were installed with BPCs. The distribution of Tech II production jobs installed had 3% installed with a BPO and 97% installed with a BPC, as can be seen in the figure below.

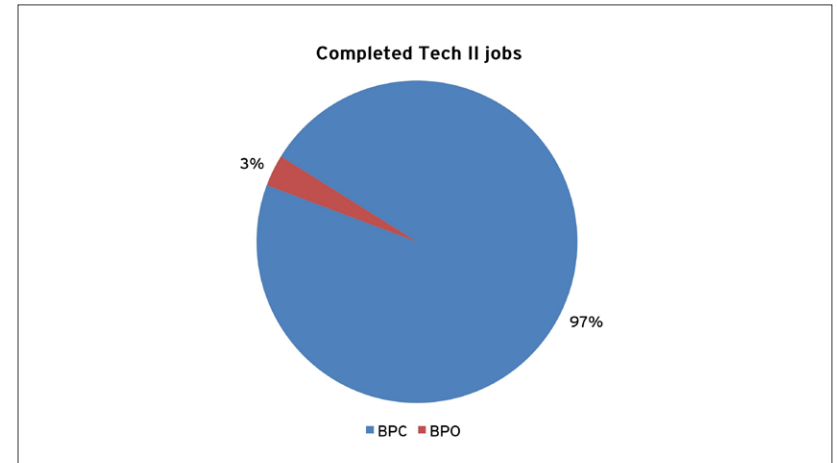


Figure 21: Distribution of the total number of completed Tech II manufacturing jobs between blueprint types. Most jobs are installed with BPCs obtained through invention as Tech II BPO owners tend to install jobs with a large amount of runs.

Excluding drones and ammo, approximately 9.8 million Tech II items were produced in Q2. Out of these, 6.5 million items were produced from BPCs, with the remaining items being produced from BPOs. Proportionally, a third of all Tech II production is executed with BPOs, and the remaining is done with BPCs.

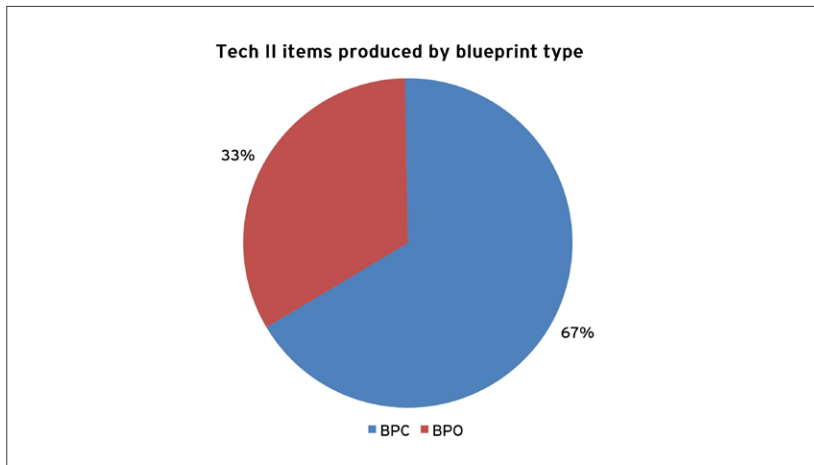


Figure 22: Distribution of all manufactured Tech II items (excluding ammo and drones) between blueprint types. Two thirds of all manufactured Tech II items are produced with BPCs.

Tech II BPOs can be used to install a manufacturing job with an unlimited number of production runs provided that the job completes within 30 days being installed. On the other hand, a Tech II BPC has a limited amount of runs and will be consumed once all the runs are used up. There are much fewer BPO jobs installed than BPC jobs even though BPO jobs account for one third of all Tech II items produced (excluding drones and ammo).

	BPO	BPC
All items	34,769	1,374
Ammo	142,005	21,218
Drones	880.4	9.8
Modules	232.1	9.5
Ships	21.7	1.3
Ships/Modules	146.6	8.3

Table 2: Average number of items produced per Tech II manufacturing job sorted by blueprint type. BPCs have a capped limit on production runs, whereas BPOs have an unlimited number of runs available.

A total of 14,008 unique characters performed a Tech II production job during Q2. If we exclude jobs for ammo and drones, a total of 11,774 characters manufactured Tech II items during this quarter. Roughly 10% of the characters which installed a Tech II manufacturing job did so with a BPO, meaning that about 33% of available Tech II items (excluding ammo and drones) on the market are being produced by about 10% of all Tech II producers.

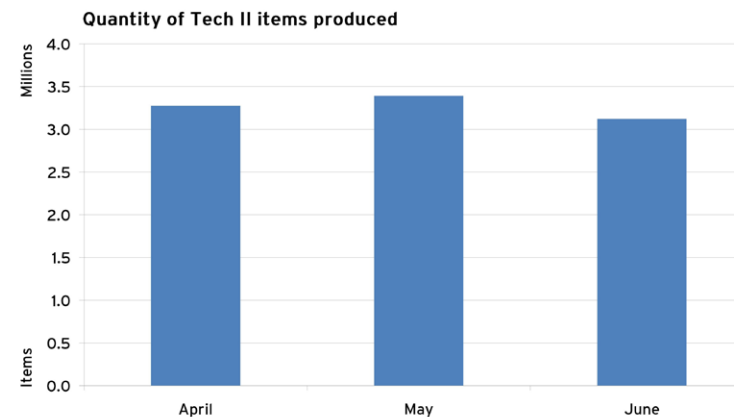


Figure 23: The total number of manufactured Tech II items (excluding ammo and drones) split up by months. Production numbers were relatively similar throughout the months.

The total number of Tech II items (excluding ammo/drones) produced during the quarter stayed relatively stable between the months, with most production done in May and the least in June. The ratio between manufacturing jobs installed with BPOs and BPCs was stable, with just a 1% deviance in May, when 34% of completed Tech II jobs were installed with a BPO, rather than 33% for the other two months.

The most popular regions to produce Tech II items in were Lonetrek, The Citadel, and The Forge. They alone accumulate for 49% of the total production of Tech II items. The Jita system, which is located in The Forge, is by far the largest market in EVE. Lonetrek and The Citadel are also in close vicinity of Jita, thus explaining the dominance of these three regions in production.

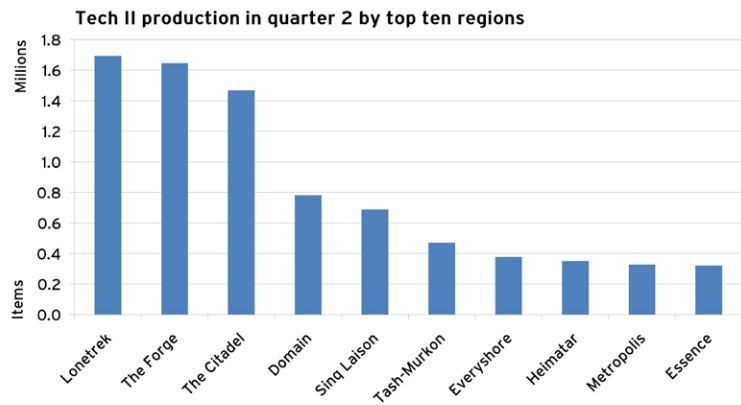


Figure 24: The ten most productive Tech II regions. The Forge and surrounding regions are hot spots for Tech II production due to their proximity to Jita.

The distribution between security levels in which Tech II production took place stayed relatively stable throughout the quarter, with the exception of a relative surge in production in nullsec space during June. The increase in Tech II items (excluding ammo and drones) produced in nullsec from May to June 2009 was 24.62%. This increase can mostly

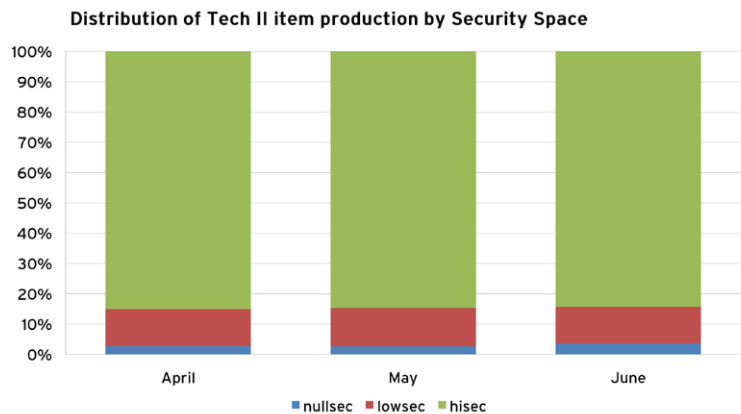


Figure 25: Distribution of security level in which all Tech II items (excluding ammo and drones) were produced, sorted by month.

be attributed to the production made possible with invention, as the quantity of Tech II items manufactured with BPCs in nullsec space increased by 40.5% in June from the previous month, while the quantity of items manufactured with BPOs decreased by 23%.

We also examined the productivity in each security tier of lowsec space more closely. It is interesting to note that 0.4 security space is the most productive tier, accounting for 74% of total lowsec production as can be seen in Figure 26. This is most likely because

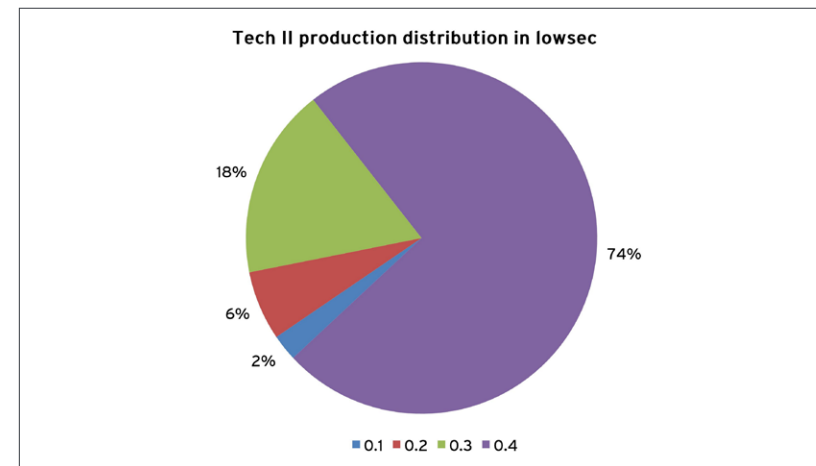


Figure 26: Distribution of production of Tech II items in low sec excluding drones and ammo.

0.4 security space is often located very near hisec space (0.5 and higher), and in many cases producers only have to take one jump to move operations to a more secure system. Productivity in nullsec space outperforms 0.1 and 0.2 together, which is attributed to the vast difference in numbers of characters situated in 0.0 (nullsec) space compared to 0.1 and 0.2.

holders shy away from storing their BPOs in stations located in 0.0 systems, which they might lose access to due to territorial conflicts. It is therefore not surprising to see proportionally more invention done in nullsec space than in other security levels.

Comparatively more production is done with BPCs than BPOs in nullsec space when compared to low security space and high security space. Due to the uncertainty of the political landscape in nullsec space, many Tech II BPO

We speculate that a considerable portion of the total Tech II BPO production in nullsec space is done with blueprints owned by alliances on behalf of their members, and that individuals in possession of Tech II BPOs are more likely to perform their production in the relative safety of high security space.

TECH II SHIPS

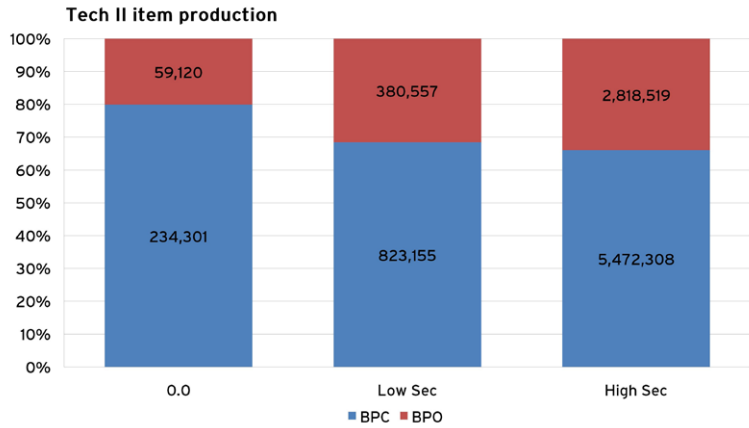


Figure 27: Distribution between blueprint types used for manufacturing Tech II items (excluding drones and ammo). Proportionally, more Tech II production is done with BPCs in O.O space than in other areas of EVE due to the risk of losing access to assets stored in O.O systems.

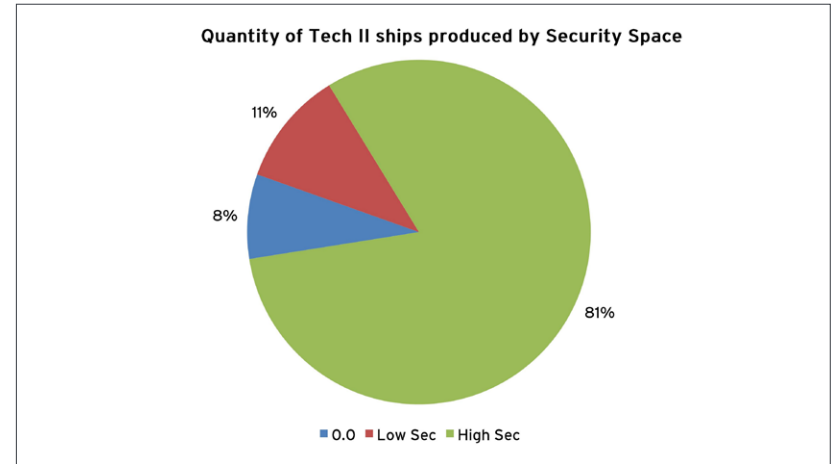


Figure 29: Distribution of security level in which all Tech II items (excluding ammo and drones) were produced, sorted by month.

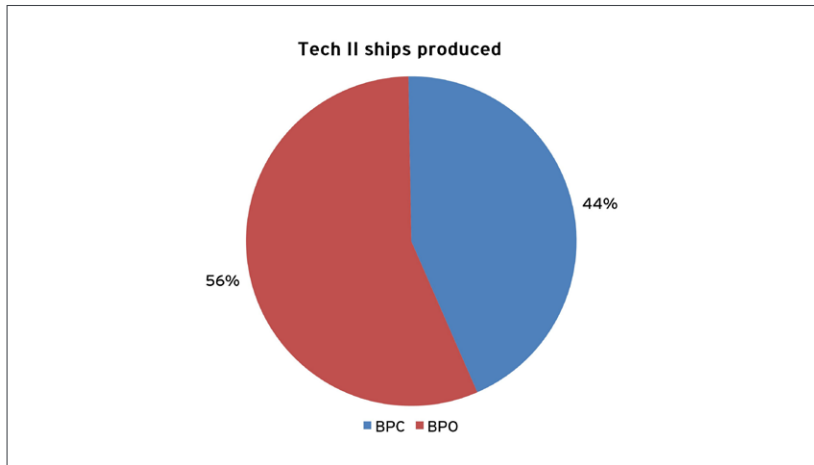


Figure 28: Distribution between blueprint types used for manufacturing Tech II ships. More ships are manufactured with BPOs than with BPCs.

During Q2 2009, approximately 350,000 Tech II ships were manufactured by 6,920 different characters. 56% of these ships were produced with BPOs, and the remaining 44% were manufactured with BPCs, giving us a wildly different picture of the distribution between Tech II jobs performed with BPOs and BPCs than the previously cited split of 33%/67% in Figure 22.

One reason why BPOs are predominant in Tech II ship production is the chance-based nature of the invention system. Unlike a BPO run, which has no possibility of failing, an invention job has a probability of failing when it is installed. The success rates for invention jobs for each type of item are predetermined values that can be improved somewhat by the

pilot's skill and the use of "decryptors." But in the end, success is entirely based on chance.

In addition, there are higher risks and costs involved with performing invention jobs for high-value items such as ships versus lesser-valued items like modules. An unlucky streak of failed attempts to invent ships could result in a large investment down the drain for an entrepreneur.

This means that potential inventors are driven away from the Tech II ship market and instead focus on inventing BPCs for modules. Those inventors would prefer the relatively higher safety of inventing blueprints for lower value items in large quantities, where each failure won't be as costly as failing a single invention job for a Tech II ship.

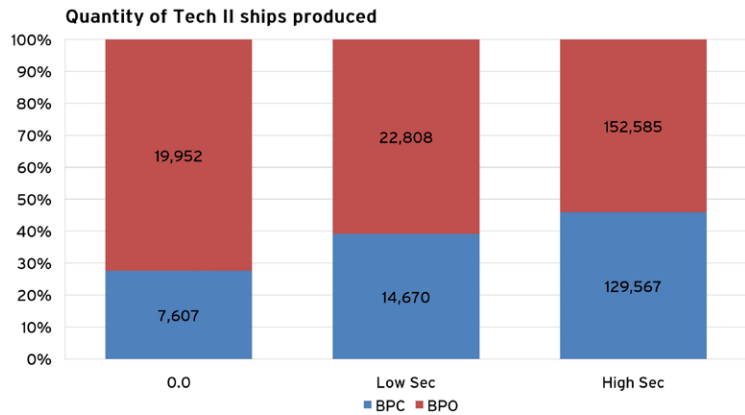


Figure 30: Total quantity of manufactured Tech II ships, split up by security status and blueprint type used. Proportionally, Tech II production with BPOs is more prevalent in nullsec space than Tech II production with BPCs attained through invention.

The proportions between ships produced with BPOs and BPCs varies greatly between different ship classes, as illustrated with these two graphs which show the distribution of the total production for two popular ship types during the quarter.

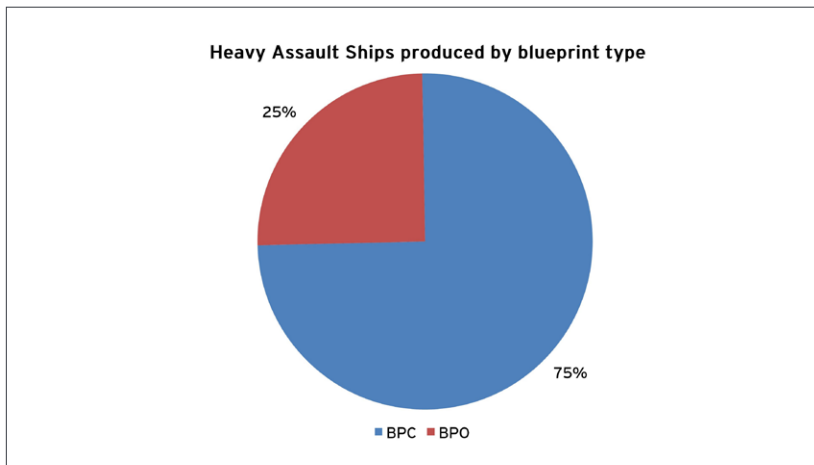


Figure 31: Heavy Assault Ships are one of the most popular classes of Tech II ships and inventors have jumped at the opportunity to fill the demand for these versatile combat ships, covering 75% of the market.

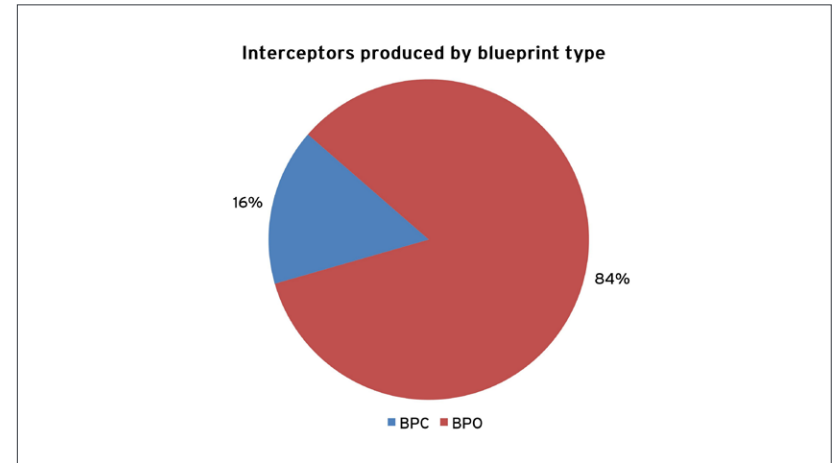


Figure 32: Interceptors, another very popular Tech II ship class. BPO owners can produce interceptors in large enough quantities in a short enough time period to effectively cover most of the demand for these ships.

Heavy Assault Ships have historically been one of the most popular Tech II ship class due to their high versatility in combat, resulting in high demand. However, their production time is rather long, requiring 1.5 days to build each unit on average. BPO holders therefore cannot fully keep up with the high demand, which creates opportunity for inventors to step in and provide the much needed supply.

On the other end of the spectrum are Interceptors, which are mostly produced from BPOs. Due to their fast build time, BPO holders can churn them out quickly in great numbers, filling a large portion of the demand for these ships. Their relatively slim profit margins versus larger and more expensive ship

classes make them an unattractive choice for inventors. Three out of every four Heavy Assault Ships available on the market are built using BPCs, while only 16% of all Interceptors are produced with BPCs.

High demand therefore leads to increased number of invention jobs for popular spaceships, such as the Heavy Assault ships, even though the main rule seems to be that invention for spaceships is a high risk but low profit venture.

As evident from the Demographics section in this QEN, the Hulk is currently the most frequently flown ship in EVE. During Q2 more than 20,000 Hulks were manufactured.

## TECH II MODULES

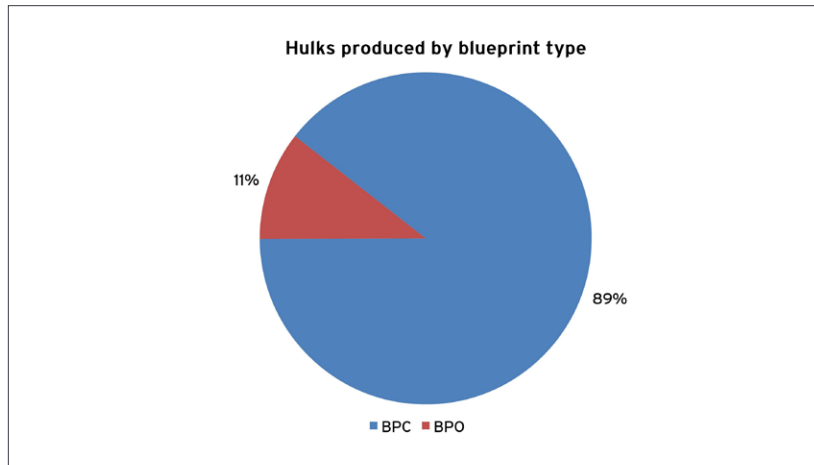


Figure 33: The Hulk is the most efficient mining ship and one of the most popular ships in EVE. Almost nine out of every ten Hulks are manufactured with BPCs.

With BPCs accounting for almost 90% of all Hulk production, we can assume that the high demand for the ship as well as the low supply provided by BPO owners due to the long manufacturing time contributes greatly to the attractiveness of pursuing Hulk invention.

As the ship with the highest mining yield, demand for the Hulk has always been substantial. Prices have historically ranged from 450-500 million ISK per ship before invention was introduced. Prices remained stable around that level for four months after invention was introduced before falling to the current level of around 100 million ISK per ship in a span of another four months.

As attentive readers may have guessed from the numbers present in the previous section, the majority of Tech II Modules are manufactured with BPCs. Although these profit margins are slimmer than those of Tech II ships, the risk of losing the initial investment through invention is lower, and the production time is faster.

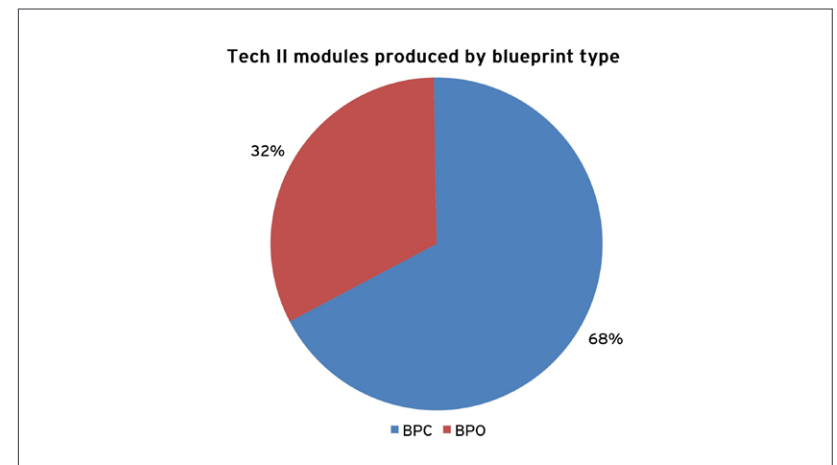


Figure 34: Distribution between blueprint types used for manufacturing Tech II modules. Almost seven out of ten Tech II modules are produced with BPC's.

Roughly 9.4 million Tech II modules were produced during the quarter, made out of 282 different types of items.

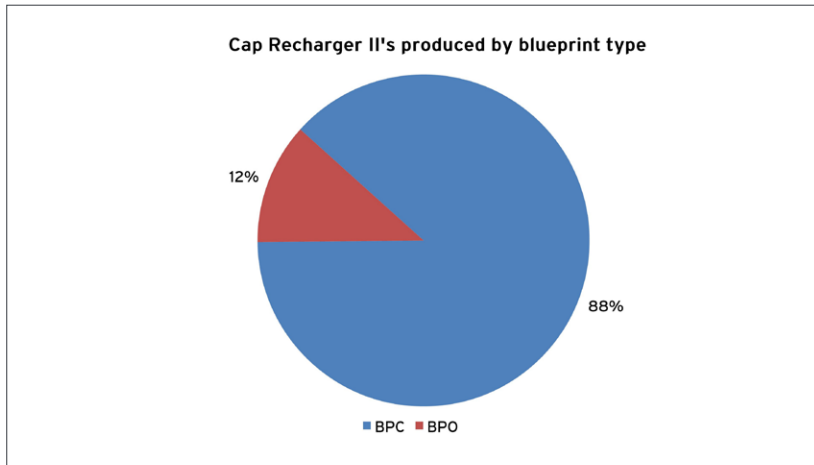


Figure 35: The Cap Recharger II is one of the most popular modules in EVE, making up over 5% of the total number of Tech II items produced. The majority of Cap Recharger IIs are manufactured with BPCs.

The Cap Recharger II is one of the most popular Tech II modules due to its utility on a wide array of ship classes. More than 530,000 units of this module were produced during Q2, testament to their popularity considering that this accounts for over 5% of the total number of Tech II items (excluding ammo and drones) produced during the entire quarter.

Their popularity has risen greatly since the introduction of invention, when the increased supply of modules to the market drove prices down to far more acceptable levels than before. Before the invention system was introduced, a single Cap Recharger II sold for 23 million ISK on average. Prices plummeted down to 4.5 million ISK per module in six months, and in the present day, prices are remain stable at just under one million ISK per unit. The increased availability of Cap Recharger IIs following the introduction of

the invention system at comparatively cheap prices caused a boom in popularity for the module, resulting in high demand which allowed inventors to maintain high profit margins on the module for a long time.

This module is still a very popular choice for inventors and remains profitable despite each module selling for less than one million ISK each, a mere fraction of its historical peak. Cap Recharger IIs produced with BPCs currently account for almost 90% of all available Cap Recharger IIs on the market.

Another very popular Tech II module is the Covert Ops Cloaking Device II, which is used by covert ops ships, force recon ships, stealth bombers, and blockade runners. Equipping this module enables ships to remain undetected, a useful attribute when operating in hazardous conditions and territory.

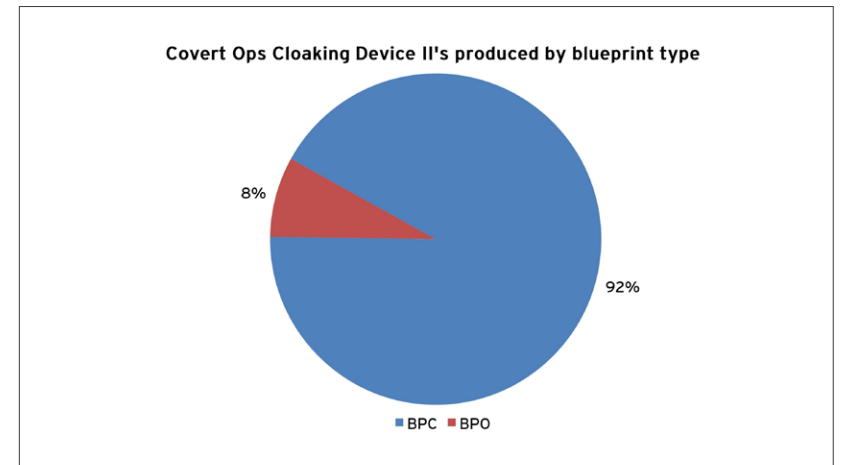


Figure 36: A popular Tech II module, the Covert Ops Cloaking Device II is mostly produced by inventors due to its high demand.

Over 115,000 units of these were manufactured in Q2, which accounts for just over 1% of the total number of Tech II items produced during the quarter. The distribution between blueprint types used for producing this module slants even further towards BPCs than the previously mentioned Cap Recharger II.

In Q2 more than 2.6 billion units of 100 different types of Tech II Ammo (including mining crystals) and five million units of 23 different types of Tech II Drones were manufactured. The five most popular Tech II drones produced accounted for almost 70% of the total production, with the Hammerhead II and Hobgoblin II both having over one million units produced each. 64% of all Tech II drones are produced with BPOs.

		Units Produced	
1	Hammerhead II	1,092,595	22.29%
2	Hobgoblin II	1,004,449	20.49%
3	Warrior II	720,583	14.70%
4	Hornet II	325,129	6.63%
5	Ogre II	279,593	5.70%
	Other	1,480,209	30.19%
	<b>Total</b>	<b>4,902,558</b>	<b>100.00%</b>

Table 3: Breakdown of the five most produced Tech II drones during Quarter 2.



The five most popular types of Tech II ammo account for roughly 34% of all produced units, with the most produced ammo type, Scourge Fury Heavy Missiles, accounting for about 12% of the total amount of Tech II ammo produced.



## SUMMARY

In conclusion, invention has taken over a large portion of the Tech II market, especially in areas where the supply from the BPOs failed to keep pace with the high demand for these much sought-after items. There are exceptions for some items like interceptors, which have relatively fast build times, and are thus mostly produced by BPO owners since they can fill the demand. , But without question, invention has had a great effect on the market as a whole.

Since the introduction of the invention system, price for many of the most sought after Tech II items have dropped down to much more affordable levels in the past two and a half years. With the barrier of entry into Tech II production effectively removed, the supply for high demand items in addition to items with long build times has increased greatly, which in turn has created market competition and made it all but impossible for cartels to monopolize certain products.

The most intriguing and unexpected revelation we had while looking through Tech II production was the relatively large amount of production done in lowsec space, beating

out nullsec space by a fair margin. As outlined earlier, most lowsec Tech II production done is performed in O.4 systems. Therefore, we can assume that this is largely attributed to its proximity to hisec space, where finished products are transported for sale on the market. There are other benefits as well, most notably the higher availability of production and invention slots in lowsec space. Between these and the generally higher availability of contracts (binding transaction agreements between parties that can include the transportation of goods) with high security space, there is decreased downtime between production jobs—a good thing, considering that time is money.

As the player base for EVE continues to grow, the demand for Tech II products will only increase, creating new opportunities for aspiring industrialists to break into the Tech II market through invention. Proportionally, we can expect BPCs to account for an increasingly larger portion of the Tech II market in the coming months and years, as the limited supply of BPOs does not have the capacity to meet the demand.

MARKET SNAPSHOTS

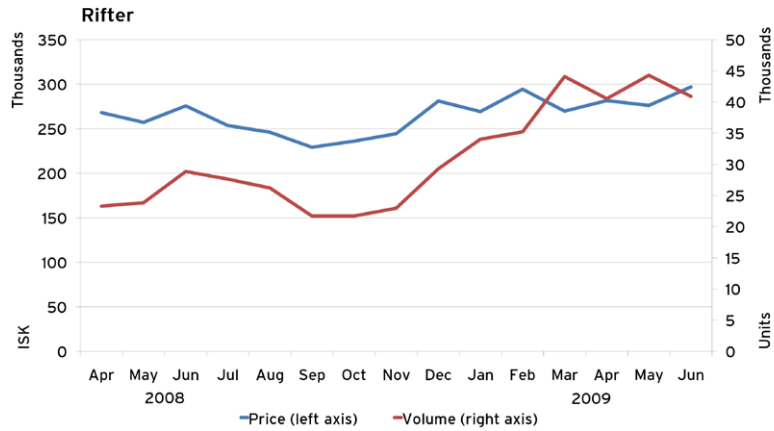


Figure 37: The recent influx of new players has no doubt contributed to the sudden increase in sales of Tech I frigates. This graph of Rifter sales and price illustrates this ongoing trend. Despite the large increase in Rifter sales over the last few months, the price has remained relatively stable, showing that industrialists are scrambling to fill in this growing market. The new Epic Arc which was added in Apocrypha no doubt contributed to the large jump in sales in March, due to experienced players gearing up to try it out.

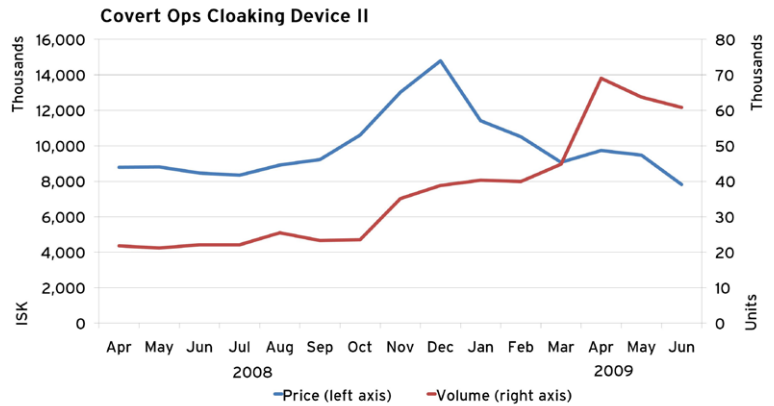


Figure 38: Due to Blockade Runners being given the ability to utilize Covert Ops Cloaking Device IIs in the Quantum Rise expansion, demand for this module increased in November 2008. An even larger boost in sales was observed in April, due to the Apocrypha 1.1 patch giving Stealth Bombers the ability to use this module. Both the price and volume sold decreased in the coming months, indicating that the market was saturated by industrialists scrambling to fill in the initial demand in April.

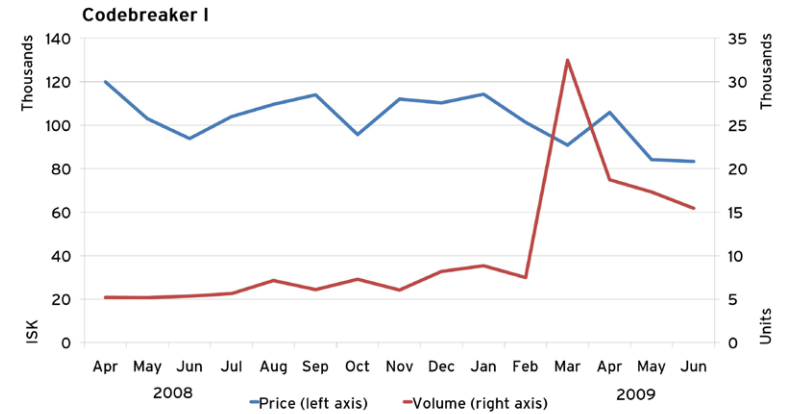


Figure 39: The Codebreaker I saw roughly a fourfold increase in sales due to its necessity for acquiring certain components needed in Tech III manufacturing. This drove the demand for these modules upwards following the introduction of wormhole space. Sales figures plummeted in the following months but still remain higher than before Apocrypha.

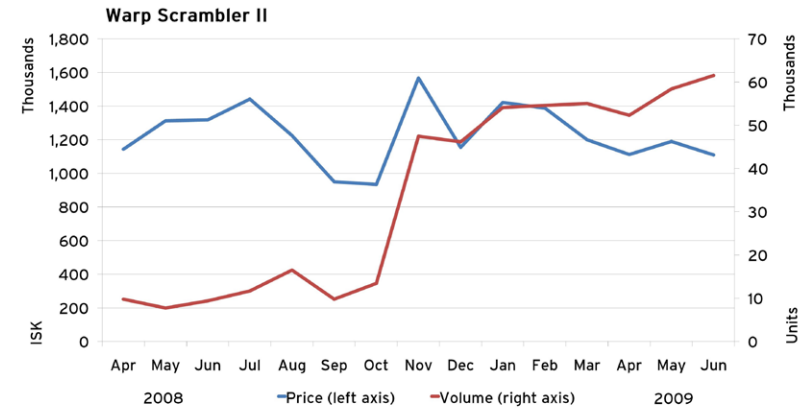


Figure 40: The functionality of Warp Scramblers was redefined in the Quantum Rise expansion, giving it the ability to disable a target's Microwarp drive. The popularity of Warp Scramblers has increased because of this, which can be clearly seen in the graph above. The price for the module has remained relatively stable.

MARKET SNAPSHOTS

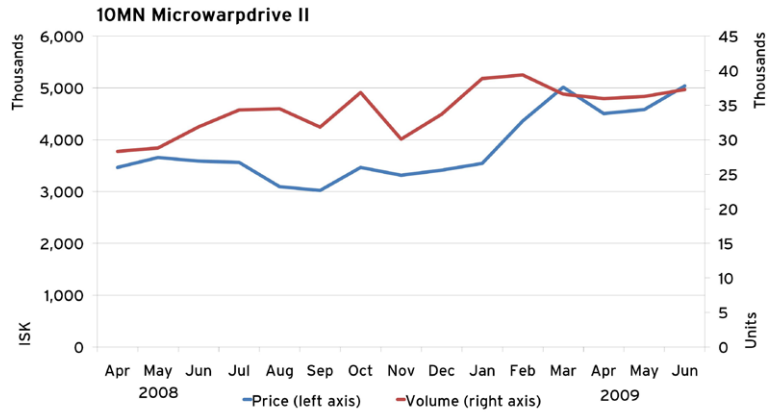


Figure 41: Despite the changes to Warp Scramblers mentioned in the previous snapshot, the volume of Microwarp drives sold has remained stable.

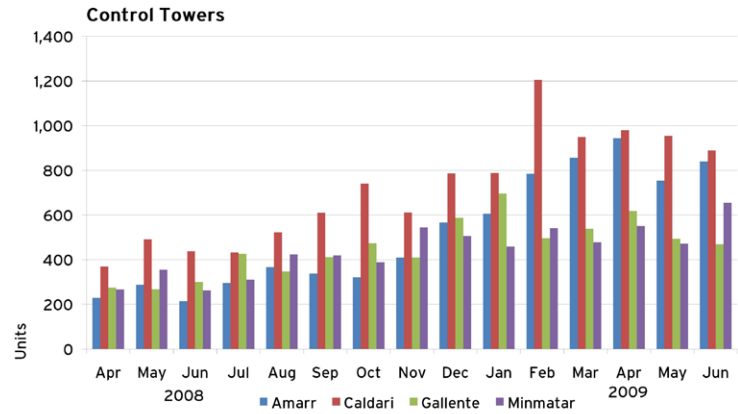


Figure 42: While the Caldari tower has historically been the most popular control tower and the Amarr one has generally been the least popular one, the last few months have seen an interesting development with Amarr control tower almost tripling in sales between October 2008 and March 2009. Control tower sales in general have increased by a large margin in Q4 2008 and Q1 2009 compared to the beginning of 2008. This can be attributed to increased alliance warfare. The increased sales of Amarr towers are most likely due to conflicts in regions of space which contain ice refinable into fuel products for Amarr towers.



MARKET SNAPSHOTS

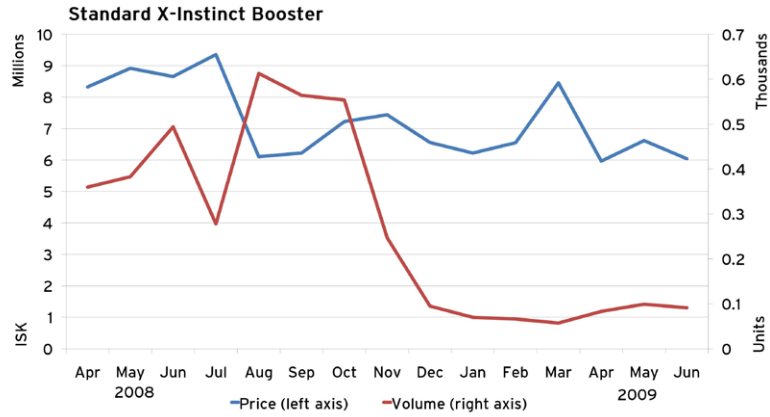


Figure 43: With changes to overall speed mechanics in Quantum Rise, demand for certain boosters such as the X-Instinct ones fell.

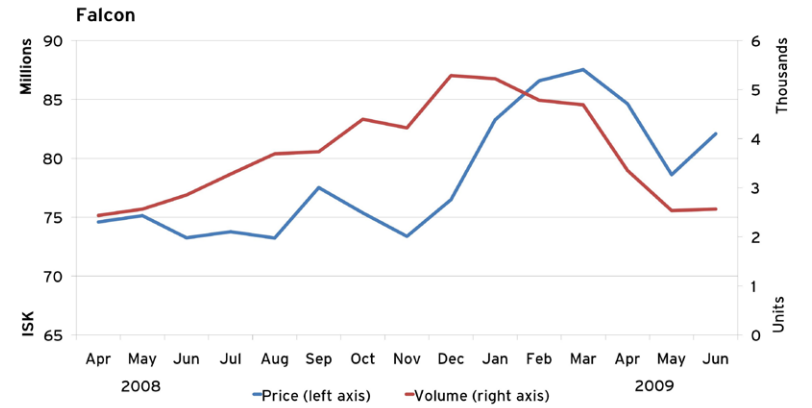


Figure 45: In the Apocrypha 1.1 patch in April 2009, the ECM optimal range bonus for the Falcon was replaced with a Hybrid Damage bonus. Following this change, the popularity of the ship plummeted down to roughly half of what it had been before.

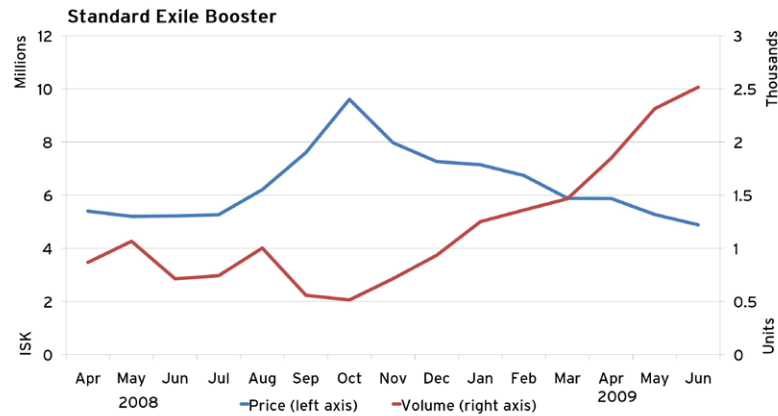


Figure 44: Other boosters, such as the Exile boosters which affect armor repair rates, have however seen a surge in popularity. This is likely due to their price going down in the last few months.



Figure 46: As with the Falcon, the Rook had its ECM optimal range bonus replaced in the Apocrypha 1.1 patch. Contrary to the Falcon, the Rook saw a large spike in popularity followed with an initial increase in price due to the increased demand while manufacturers scrambled to fill this niche. The Rook has considerably more combat prowess when compared with the Falcon, making it an attractive choice for former Falcon pilots.

MARKET SNAPSHOTS

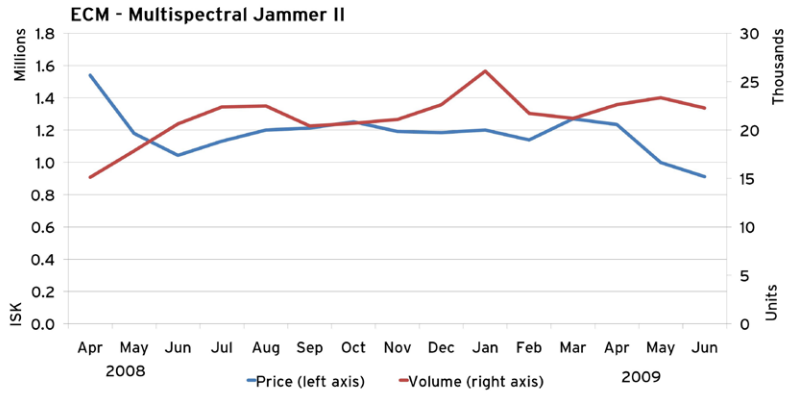


Figure 47: Despite the massively decreased popularity of the Falcon, which was arguably one of the most popular ECM ships before Apocrypha 1.1, there has not been a noticeable decrease in the volume sold of ECM modules such as the ECM - Multispectral Jammer II.

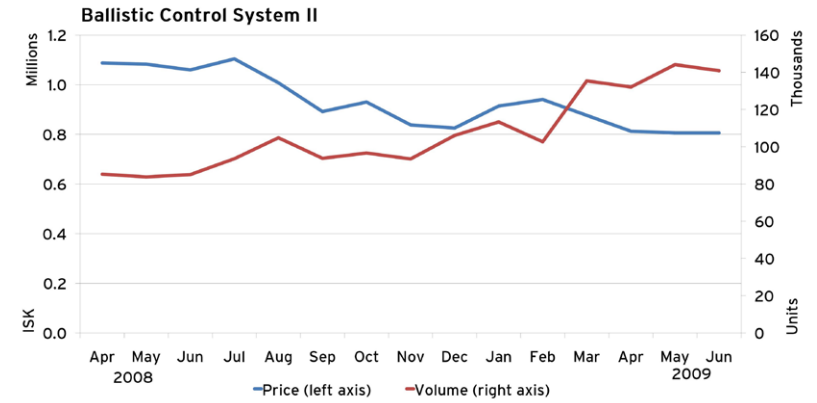


Figure 49: The Ballistic Control System II is a commonly used module among missile-firing ships. The volume sold of this item has risen considerably over the past few months, with almost 50% more being sold than in November 2008. Prices have remained stable around the 800-900 thousand mark for this time period.

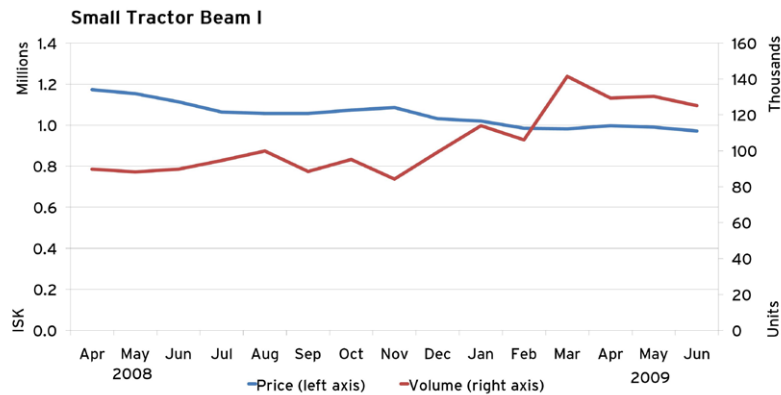


Figure 48: Small Tractor Beam I's are frequently used on dedicated salvage ships. A spike in units sold following the Apocrypha expansion can be attributed to players gearing up salvage ships to bring on wormhole expeditions in order to obtain elusive materials required for Tech III production.

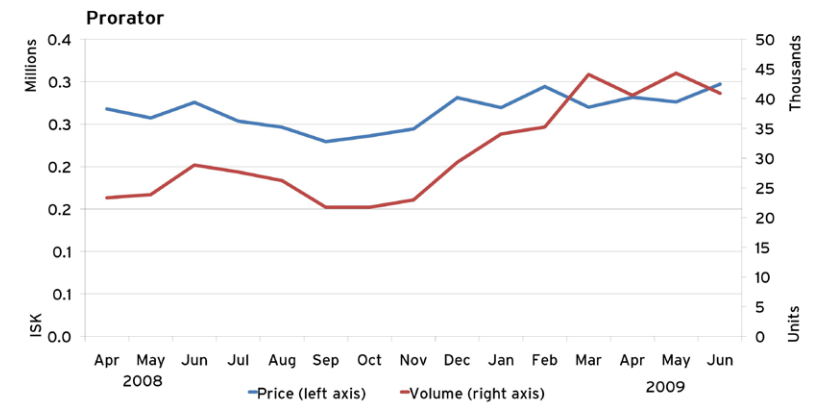


Figure 50: Stealth Bombers had their role changed significantly in the Apocrypha 1.1 patch. In addition to being given the ability to use Covert Ops Cloaking Devices, they were also given the ability to equip Siege Missile Launchers rather than Cruise Missile Launchers, allowing them to deal heavy volley damage to large targets such as battleships. All Stealth Bombers saw a large increase in both volume sold and price due to the increased demand.



MARKET SNAPSHOTS

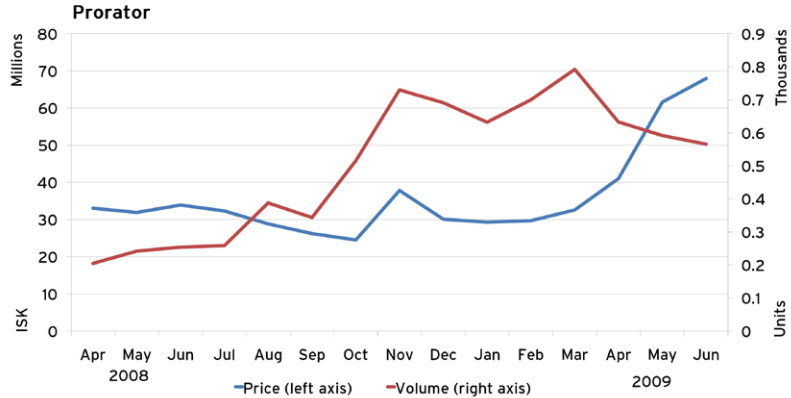


Figure 51: Blockade Runners such as the Prorator were given the ability to equip Covert Ops Cloaking Devices in the Apocrypha expansion. A slight initial increase in demand was followed by a drop in units sold during the next three months. This could in part be due to the increased survivability of these ships, but also due to prices doubling from February to May, which can be attributed to market speculation surrounding the changes in Apocrypha.

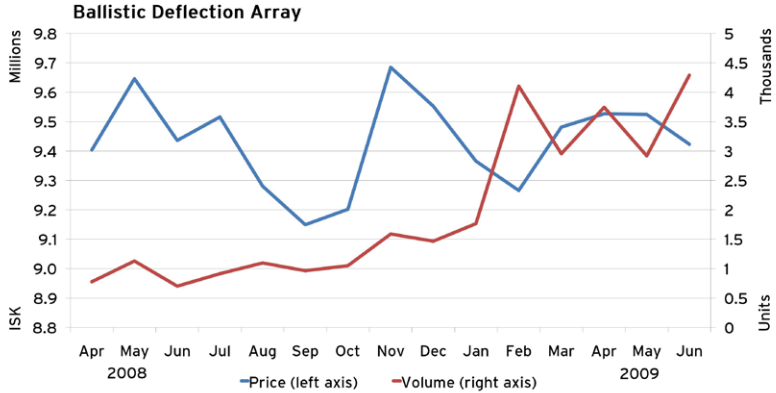


Figure 52: Starbase shield hardening modules are seeded on the market so their price has always been relatively stable. Spikes in the volume sold correspond with alliance conflicts within EVE.

MARKET SNAPSHOTS

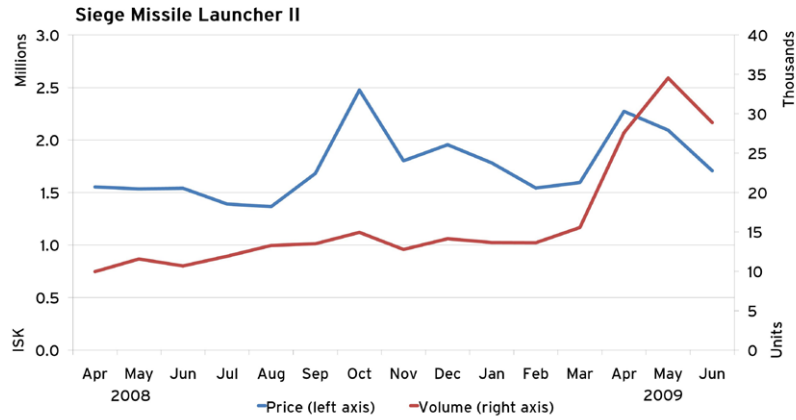


Figure 53: Siege Missile Launchers saw a large spike in volume sold during April and May. This can be partially attributed to Stealth Bombers being given the ability to use these launchers.



Figure 55: Steady increase in demand for destroyers such as the Thrasher can be attributed to the influx of new subscribers in the last six months.

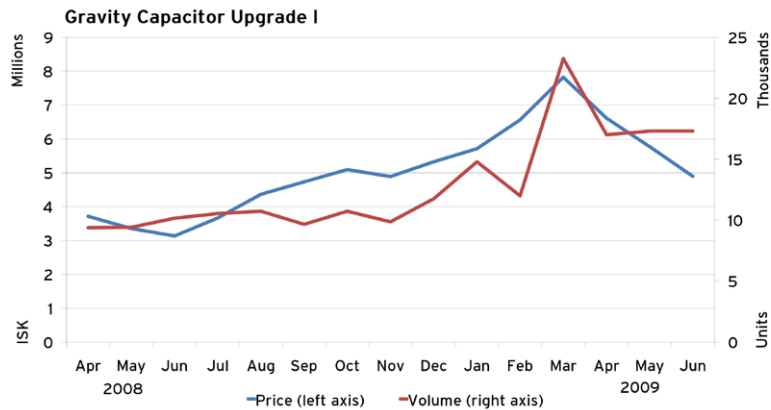


Figure 54: Demand for this rig went up when the Apocrypha expansion launched and players started venturing into Wormhole space, as it provides a hefty scan strength bonus which helps with locating hidden wormholes. Prices initially rose but went back down in the following months as demand for the rig stabilized.

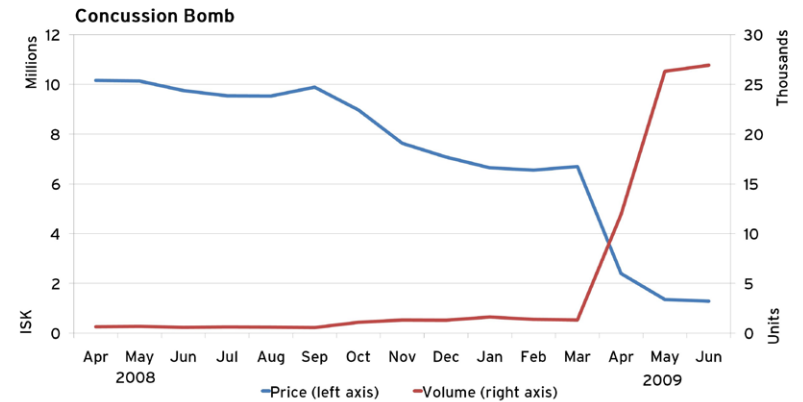


Figure 56: In Apocrypha 1.1, drastic changes were made to the manufacturing cost of bombs. The prices were lowered as a result which in turn drastically increased the number of bombs being sold on the market, showing that the high prices were deterring pilots from utilizing these weapons.

MARKET SNAPSHOTS

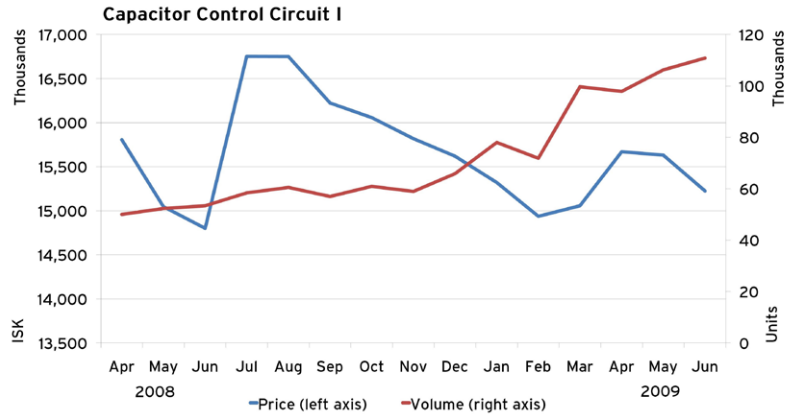


Figure 57: Capacitor Control Circuit I is one of the most popular rigs in the EVE universe. The price for this module has stayed relatively stable for the past year, and the sold volume has increased almost twofold in that same time period.

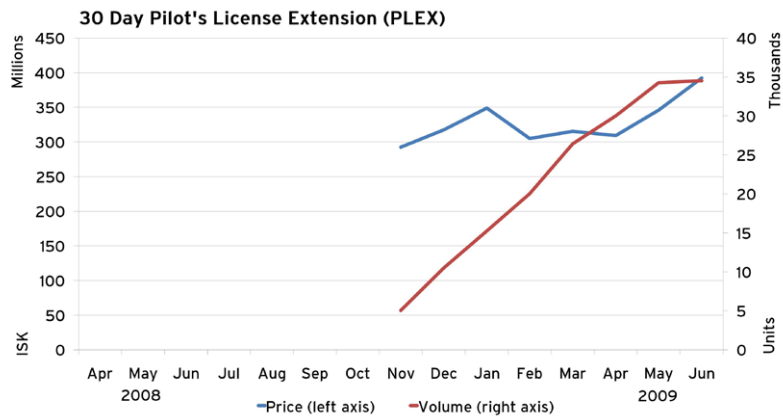


Figure 58: The average price for PLEXes has been stable, fluctuating between 300-350 million ISK, until June when it rose to almost 400 million ISK. The increased price also resulted in the volume sold stabilizing somewhat.

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