Multi-player Fun

XPILOT

WINFRIED TRÜMPER

Like so many things for me, it began long ago. Doom could just be played within a local network, at the same time crippling it; provided you had already received higher orders of IPX configuration under DOS. And what you experienced then actually made Doom superfluous: as the result of the IPX broadcast storm triggered by the game, some of the secretaries who were being hindered in their work turned into raging monsters. Often, it was hard to tell the difference between game and reality.

The new version of XPilot on the other hand could be played via the Internet. And it ran, as the name suggests, under the X windows system. To be more precise, there is an XPilot server and a client, where only the client needs X11. In the meantime, clients for variants of Windows have now become available, although they leave a lot to be desired in some aspects.

But XPilot also disrupted network operations in many a university, because the administrators did nothing but play all day, thus giving denial-of-service a new twist. XPilot was a game of its time: impressive coloured vector graphics, tedious-to-learn keyboard controls, barely synchronised, croaking sound. What a crass thing compared to today's Ego-shooters. The facts about XPilot are summarised according to modern criteria as a games rating in Figure 1. Hardly any points and yet still 90% gaming fun? Yes, even today XPilot still has its attractions, which go beyond pure retro-computing or feelings of nostalgia.

Installation and preparation

The game gets under your skin, not through realistic graphics nor through particular brutality or a complex frame handling. It's just the dexterity, the rapidity and the strategy of other human co-players that give the game its allure. Put another way: XPilot is terribly boring to play on your own. On the other hand you need solid training to have any chance in the shark-infested Internet. It's best to start training on your own local server, on which you will not be bothered by the overwhelming Nordic Empire (top-level domains *.dk*, *.se*, *.no* and *.fi*).

Before launching into the game, you should make sure that you are using at least Version 4.3.0. The version number is always stated at the start of

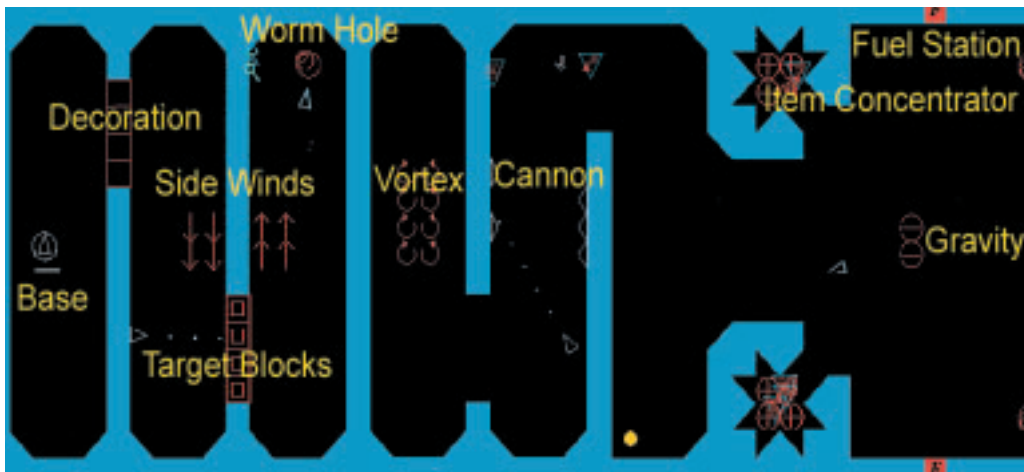**Figure 1:**
An objective game rating.
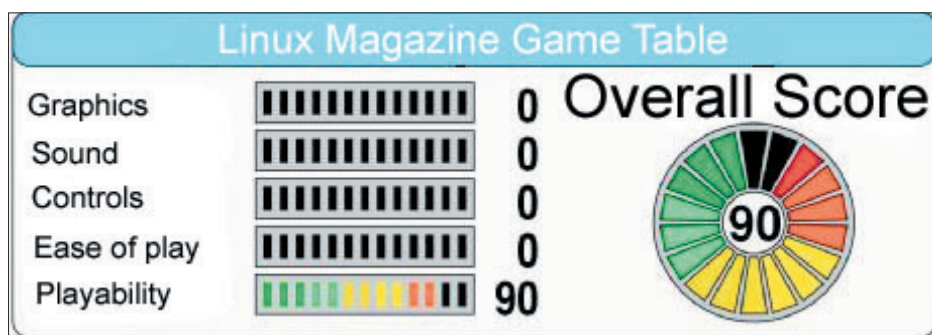
Figure 2:
Training in the world of newbie-demo.

the program. You can build the files from a *tar* archive, and install yourself. This procedure is easy and is explained in Box 1.

On start-up, the server (started with */usr/games/xpilots*), immediately contacts the meta-server named *meta.xpilot.org* and enters itself there in the list of active servers. So other players become aware of your server and can connect to it. The options +*reportToMetaServer* and -*onePlayerOnly* prevent this action, if you want to be left undisturbed. The client is now started with */usr/local/games/bin/xpilot &*. The meta-server can be queried directly by the XPilot client, if you simply omit a host name at the start. Click on the Internet button and you get a list of world-wide servers, sorted according to the number of players.

Of the many options for the server process, -*mapFileName* is one of the most important, because you use this to specify the file name of the world map. The world *newbie-demo* was developed especially for this article, and it contains all the components with the exception of the balls. Copy a map file *newbie-demo.xp* into the current directory, and then start the XPilot server on the command line: *xpilots -mapFileName ./newbie-demo.xp*. Beware: The cannons on the walls fire when approached, and you must activate the protective shields promptly by using the space bar.

Pilot, salute the sun for me!

When starting the client, specify on the command line as parameter *localhost*, so that the local server is contacted. The complete command to start the client is */usr/local/games/bin/xpilot localhost &*. The client reads its settings, by the way, from the file *~/.xpilotrc*, which you can edit either manually with an editor or from the configuration menu of the client (under *Menu/Config*). Firstly, the client presents you with an internal command line, which you can explore yourself with the *help* command. By pressing the Enter key, finally, you can start the game. If you left out the *localhost* when starting, click now, to get into the world *newbie-demo*, in the client window on *Local*, and you should see the

message "The following local XPilot servers were found". You will be offered your local server, and with a click on *Join*, you start at training camp.

Steering the ship can be done with either the mouse and/or using the keyboard. Newer Windows keyboards like to protect the user from himself, by locking up completely if you press several keys. Simultaneous turning, acceleration and shooting ([a]/[i]+[Shift]+[Return]) is impossible with this type of keyboard, and in this case it is advisable to have mouse control right from the start, to have any kind of a chance. The next time you buy a keyboard you will automatically watch for such characteristics.

Moving with the ship is simple, in principle. Turn left with [a], turn right with [s], accelerate with [Shift] and fire with [Return] – not to be confused with [Enter] on the number block, which toggles back and forth between mouse and keyboard control. Oh yes, and to couple and decouple the ball, press [f]. This can become necessary, in order to drive the ball and at the same time fight an opponent. There is no braking, because otherwise the game would become too complicated. To stop, make an abrupt U-turn. You should avoid colliding with walls, opposing players and their shots. Protective shields only help up to a certain speed, so it's always better to rely on your own skill. The shields, the deployment of items and movement also require (lots of) fuel, which you must promptly refill. If you can't find any fuel tanks lying around, you can search the world for built-in petrol stations, fly to them and with the [f] key, fill up. Amass items by switching off the shields using the space bar (if active) and flying over them. A list of all items in the server versions from 4.1.0 on is shown in Table 1.

Some items get used up over time or with use, regardless of whether successfully used or not. The more items of a type are attached to the ship, the stronger, too, is their effect. Bear in mind the possibility of modifying the weapons. A smart guided missile finds the enemy automatically, while an invisible enemy can be tracked down by a heat-seeking missile. The keys for modification can be found in Table 2.

The keyboard assignment is a science in itself, and so is the question as to whether you want to

Box 1: Installation instructions for XPilot
As root system administrator, change to the directory /usr/local/src and unpack the archive there:

```
cd /usr/local/src
tar xzf /tmp/xpilot/xpilot-4.
3.1.tar.gz
```

Change to the source directory and compile the sources as follows:

```
cd xpilot-4.3.1
xmkmf -a
make
```

A final

```
make install
```

copies all files to the designated places in the file system, the server to /usr/games/xpilots and the client to /usr/local/games/bin/xpilot.

COVER FEATURE   XPILOT

Table 1: Items

Symbol	Description	Key
	Fuel Needed for propulsion and weapons. Can be used to repair your own base. Can also fill your tanks	none
	Tanks To take on additional fuel. Also accelerates refueling. Each tank holds only a limited quantity of fuel. Can also be used as a weapon, by decoupling them. The tanks, together with the fixed-installation main tank, form a unit, whose fill level is displayed on the right in the HUD	[R]
	Aircraft cannons The cannons built into the ship. Can be added to with a fan and a tail gun	[Return]
	Fan canon (wides) Scatters the shots from the on-board cannons in a wide angle. The angle can be adjusted with the [z] key in four steps	[Return]
	Tail gun (rearshots) A cannon at the stern of the ship. [Return]	
	Afterburner Better use of fuel. Makes the propulsion of the ship more effective	none
	Boost Gives more push for a short time. Gets used up at the same time	[J]
	Tractor beam For fatal pulling or pushing of other players	[T]
	Autopilot Keeps the ship in its present position. Useful for beginners for refueling	[H]
	Extra shields Extra strong protective shields protect against contact with walls, hostile ships and their weapons. Release with [G], activate with the space bar. As long as the shields are active, you cannot fire your own weapons nor pick up any items. Nor do the extra shields help against a collision with a cannon or a treasure chest	[G]
	Laser A beam of light of greater or lesser length. Can atomise or maim an opponent	[-]
	Laser reflector Reflects back the laser beams of other players to some extent. The probability of being hit by someone is cut by half for each reflector	[I]
	Cloak Makes your own ship more or less invisible for other players. The exhaust gases, however, continue to be visible. Flying through wormholes, bombardment and ECM can nevertheless make you visible, despite the cloak, for a short time	[Del]
	Sensor Makes other invisible players more or less visible, i.e. is the opposite to cloaking	none
	Transporter beam For stealing items from other players	[T]
	Mines Explode when other players approach or by remote detonation. In mobile or stationary design. Mines can be reprogrammed with ECM	[Tab] [+]
	Missiles Can be used in three types. Unguided missile, or torpedoes, simply fly in a straight line – until they hit something. Heat-seeking missiles track active powerplants by the heat they give off - and their own too, so be careful. Programmed or smart missiles track down the players whose name they have in their radar. With ECM the smart missiles of other players can be reprogrammed. Invisible players cannot be traced	[#] ['] [=]
	ECM (electronic counter measures) Act upon the on-board electronics of the opponent, blinding him as a result, cause the loss of the ball, destroy part of his laser and reprogram mines, missiles and robots in the immediate vicinity. The strength of their action depends on the distance. The maximum range is eleven blocks	[[]
	Deflector Sometimes fends off shots and other dangerous items from the ship. Less effective than protective shields	[O]
	Hyperjump Displaces the ship at random to another point in the world. Gets completely used up at the same time	[Q]
	Phaser Dematerialises your own ship, so that you become invulnerable and can fly right through other things. On the other hand, you cannot pick up any items or fire weapons. The effect lasts up to four seconds	[P]

Figure 3:
Key configuration.
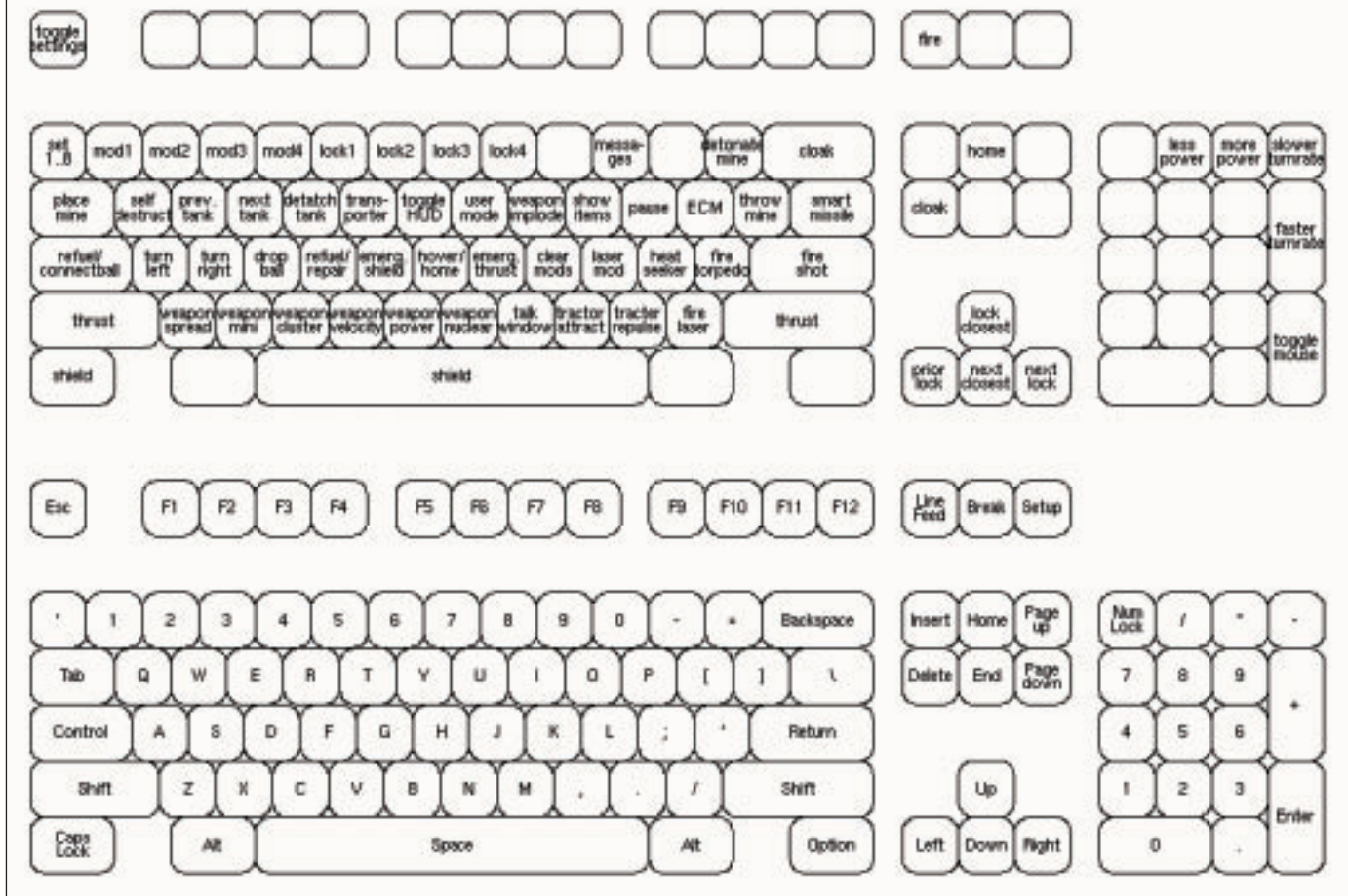
play using mouse or keyboard. In any case, you should configure the keys at the beginning such that they match the original settings.

You should make use of three overriding keyboard functions:
- Alternative client configuration, to which you can switch in special situations with the [Esc] key. For example: in close fighting, to zoom closer to the events
- Macro keys for weapons configuration. For example: I B3 Z1
- Talk macros for often-used phrases. For details see the file *README.talkmacros*, in the subdirectory *doc* of the XPilot sources

Unfortunately these functions can only be assigned by editing the *.xpilotrc* in a text editor

Psychological weapons

Apart from control of the ship and the deployment of the weapons, psychological strategy also plays a role. Which also brings us to the first ground rule: If you ever fail, you are never personally to blame, but the client, the network connection or the unbelievable luck of your opposing player. Here are a few typical expressions, with which you can

indicate this: lucky, pure luck, never!, pathetic, stray, no way!, die!, hands off, damn, forget it, hey, doh, oh my.

It is almost superfluous to refer to the possibility of communication with other players. The chat line is simply part of a network game on the Internet for this and is activated with the [M] (message) key. The language of XPilot players has a few peculiarities. So-called "item-wussies" are players with a passion for collecting items, "suiciders" commit suicide out of cowardice and "(base) sitters" are participants who never attack. You can even talk to the server, which understands the commands */advance*, */help*, */kick*, */lock*, */password*, */pause*, */queue*, */reset*, */set*, */team* and */version*. For example: *m/help set*. In this way, you can configure the server without a restart; although for most operator commands, you do need an ID, defined in the world map with the command */password*.

Now, are you fed up with the world maps *newbie-demo.xp* and the factory-set *default.xp*? Then it's time to get busy with the many XPilot worlds. An illustrated overview can be found at the *http://www.undue.org/homepages/matt/xpilot/maps.html*. There are three basic types of XPilot world: Duels, Racing and Ball Hunt. You should start with the individual fighting as in the standard map, and

**Figure 4:
Extract from Mad
Cow Disease.**

The author

*Winfried Trümper develops
bang-on concepts for the
further development of UNIX,
such as sql4txt, docfs, shobj or
file-rc. Since he is unable to
live from this and from playing
Xpilot alone, he ekes out a
living by Perl programming
and system administration.
He can be contacted at
me@wt.xpilot.org.*

then later you can try racing and finally learn the noble art of the ball game.

By far the most popular XPilot world is Bloods Music 2. Two teams of four players each try to steal the ball of the opposing team and to place it in their own garage. This is by no means simple, since the ball weighs pretty heavily. Yes, indeed, in XPilot everything obeys the laws of physics and is also calculated accordingly: gravity, mass, angle of ricochet, etc. If the theft succeeds, then there are a whole lot of points for the team and the same number of minus points for the opposing team, which is why they will try anything to protect their own ball.

This includes the deployment of on-board cannons, whose strike costs the opponent one of their four lives per round and brings them back to their home base. But beware: Bloods Music 2 is the playground of the XPilot gods and therefore only recommended for experienced players. Fortunately, however, there are a whole lot of other interesting world maps, such as on the following: Tourmination, New Dark, Hell, Hi There, Teamball, The Caves, Pizza and Mad Cow Disease (see Figure 4). The latter, due to its special originality, is my personal favourite, even if one has seen all the gags after a few rounds.

If you ever draw up a world map yourself, then take into account the problems of non-local players, soft walls, against which one is not immediately smashed to pieces and a low image refresh rate of 12 frames per second. The construction of worlds is beyond the scope of this article but is certainly possible, with a text editor and a bit of hard work.

XPilot client and server communicate with each other on the basis of the UDP/IP protocol, which has the advantage over TCP/IP of error tolerance. If ever a UDP packet does not arrive, then the Linux kernel does not attempt a re-transmission, because the transmission takes a long time measured by human reaction times, and in the meantime the player

would miss out on the rest of the events in the game, which would by now be queueing up in the form of new UDP packets. With XPilot one soon learns how fast human reaction time is - about 20ms. In the local Ethernet (10 Mbit/s) the run times for data packets, at 2ms, are usually less than that, while on the Internet one often plays beyond the 20 ms limit. Lag is the name for this delay in XPilot jargon. And if the lag is to blame for the fact that one loses control over the ship in a crucial situation, then in the client chat line will quickly fill with vulgar expressions that cannot be printed here.

Run times to the server can be measured with *ping*, which states the run times in the *time=* column. Over 60ms means you have a severe disadvantage, and over 100ms means you are playing more out of politeness or else training. So-called lag-training helps for the team cups which take place several times a year, at which teams from various European countries compete against each other for two days. Then, of course, one has to contend with the delay to far distant servers.

```
wt@backstage:~> ping -c 5 wonder2.e.kth.se
PING wonder2.e.kth.se (130.237.48.16): 56 da↵
ta bytes
64 bytes from 130.237.48.16: icmp_seq=0 ttl=↵
51 time=44.3ms
```

If you run into problems with XPilot, the *rec.games.computer.xpilot* newsgroup is a helpful place to start. There you can ask questions. I have forewarned people. The newsgroup is also the right place to start looking for addiction counseling. For example, you should try to break free from XPilot, if after the game you see red triangles before your eyes for long periods, potential feelings of dizziness... XPilot sickness is the specialist term for these kinds of complaints. An article called "XPilot - how can I break free from it?" is already being written. But until that appears, you can still play a couple of rounds. ∎

Table 2: Modification of weapons	
Action	**Key**
Implosion Weapons implode and as a result draw all the surrounding players towards them (possibly to their doom). Pressing again switches back to explosion mode	[i]
Angle of scatter the firing angle can be selected in four stages (Z0-Z3). If your ship is equipped with lots of fan cannons and if other players are already deriding you for being like the sun, then a smaller scatter angle will soon put a stop to this jeering	[z]
Big In four stages (B0-B3) the weapon is topped up with additional fuel, so that the weapons become heavier, and because of this they fly more slowly and also suffer more damage	[b]
Velocity Weapons and particles fly faster, but also disappear faster. Here again, four stages from V0 to V3 are possible	[v]
Fragmentation / cluster Very nasty modification, which not only causes mines and missiles to produce pressure waves, but also to leave behind a hail of shrapnel	[c]
Nuclear Several mines or missiles are combined into one and this results, especially as "full nuclear weapons" (FN), in extremely destructive weapons. Get out of the dust promptly, otherwise you will get hit by something, too	[n]
Multiplication Mines and missiles are shot off in smaller but multiple form. Can be selected from single (X0) to quadruple (X4)	[x]

Info

*http://www.xpilot.org/
http://www.undue.org/homep
ages/matt/xpilot/maps.html
http://bau2.uibk.ac.at/erwin/N
M/www/*