Flight Plan Form

The form shown at left is designed for those who enjoy flying regularly but, because of limited time, often restrict flights to relatively short trips between two airports. It is tailored for simmers who want to spend as little time as possible flight planning, yet want a semblance of organization when recording airport, runway, radio, and waypoint information. This log is designed for this type of flying. It is not intended for monitoring every pound of fuel or noting every nuance of realism possible with flight simulation.

The form is a handy way to organize and record flight information including ATC issued instructions. It can prevent overlooking a bit of essential data before exiting a planning aid such as the FS flight planner. The log becomes a valuable reference during flights. What data to record, how, and where to record it will be illustrated in the following pages. Planning or navigating the various legs of a flight will not be the primary focus.

A full-size PDF version of the form is include with this archive. It prints on one 8.5"x 11" sheet of paper. Each printed form will contain five identical sections. One color-coded section is shown below.

A flight planning section

How to correctly record the data in these sections will be described in detail later when two flights are planned and flown using the form. These will include a VFR and an IFR flight. But for now, the various colored areas seen in the section above will be briefly introduced.

Yellow: There are four categories of information highlighted in yellow. The categories are Landing, Parking, T.O. (Takeoff), and IFR clearance. They are all located at either the top or bottom of each section. They will be filled out as radio instructions are received. The info can be written in the same sequence as they are issued by the default control services. Copying this information onto paper is easy as filling in the blank spots.

Pink: This covers Airport information; Name, Country, ICAO code. This data can be gathered from your favorite source of planning information such as the default flight planner, one of the commercial flight planners, or from an aeronautical chart.

Blue: The blue area is reserved for Waypoint Identification and associated information. The most common WP types might be VORs, DMEs, NDBs, or GPS Intersections. But they may also be VHF navigational points including towns, rivers, or highways; anything that will assist in navigation. There is room for five waypoints. If more is needed, two or more sections of the form can be combined. This would allow a maximum of 25 per printed sheet.

Purple: ILS information is written here; the radio frequency, the ILS runway heading and the ID code. In the "RW" column, the small grayed blocks are for recording "L", "R", and "C" when such runway notations are applicable. Two rows are provided for the ILS data. At airports with more than two ILS runways, there are five additional dotted lines in the white space below the first two for this information.

| Green: | Runway information is written in the green areas. Runway designations, airport elevation, runway lengths, and surface type can all be recorded. Again, |

Green: Runway information is written in the green areas. Runway designations, airport elevation, runway lengths, and surface type can all be recorded. Again, the small grayed blocks are for recording "L", "R", and "C" when such runway notations are applicable. There is room for three runways. At airports with more, the additional data can be recorded in the white space below the first three.

The green compass rose can be use for diagramming an airport. A simple sketch of runways with IDs will assist with landing when you need to refresh your memory of the runway layout. Taxiways, refueling points, on-site VORs, NDBs, and Markers can all be added, or not, as desired.

White: This space is the "remarks" area. This can include any additional information you consider important. For example, it may contain a note about terrain height along a navigation leg, airport or other frequencies of special importance, or simply a place to jot down ATC info you hear along the route.

Before starting the first flight plan, print out the PDF form on your computer. To save ink, you can use draft quality if your printer has this feature. The form can also be printed using only black ink. The readability obtained by using these properties will be more than sufficient for FS work.

VFR flight planning, section 1
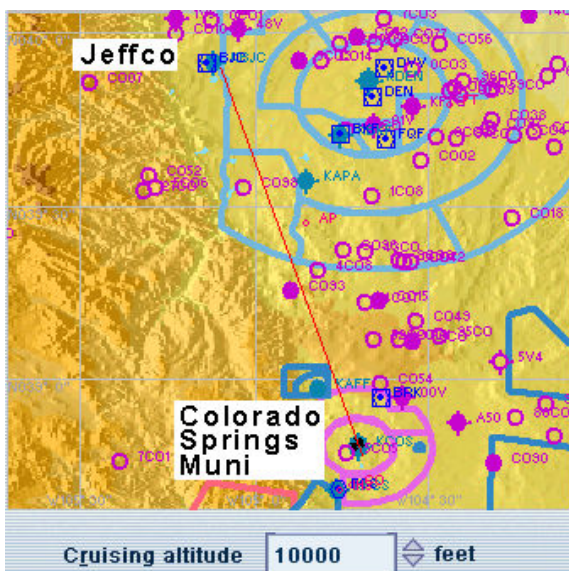
The first flight plan, at left, will be a one-leg cross-country between two smaller airports located in the western United States. They are both situated in the state of Colorado in the vicinity of Denver.

The default flight planner was used to plan this VFR trip originating at KCOS, Colorado Springs Muni and terminating at KBJC, Jeffco. This is a short leg of about 70 NM and will be flown in the default Cessna 182, but any aircraft capable of using the available runways would be suitable. The plane is currently parked at the Colorado Springs airport.

In the map at left, we can see that a VOR is located at the Jeffco airport. We will use this radio-aid as the primary means of navigating. But, along the way we can verify our location by map reading airports lying near our intended course. For this exercise, we will ignore the airspaces enroute. However, these can be recorded should you prefer to adhere to airspace altitudes and procedures. How this is done will be shown later.

Because the aircraft is already on the ground and parked at the departure airport, only a minimum amount of information is necessary in first section of the flight plan log. The data entry will begin by filling in the airport name, country, ICAO code, and type of flight (VFR). This data includes the items below circled in red.

At right, airport and runway information from the flight planner is shown. This data is also recorded in section-1 shown on the previous page. For this illustration, it was recorded in green. Runway data includes a sketch of the three runways drawn inside the compass rose. The heading layout of these

Latitude:	W38*48.35'
Longitude:	W104*42.02'
Elevation:	6184 FT

Runway	Length	Surface	ILS ID	ILS Freq	ILS Hdg
17L	13515	Concrete	ILPI	109.100	169
35R	13515	Concrete			
17R	11029	Asphalt			
35L	11029	Asphalt	ICOS	109.900	349
12	8266	Asphalt			
30	8266	Asphalt			

runways can be estimated by noting the heading ticks spaced at 30-degree intervals around the rose.

ILS data (purple X) and WP data (blue X) are not needed for this particular section since the aircraft is already located at this airport. Neither is Landing nor Parking instruction at the top of the section. During a cross country composed of several legs, this data would have been recorded because every departure airport was previously the arrival airport.

A couple of points to note; the right and left runway letter designations (R, L) for the two runways at Colorado Springs were written in the small grayed areas inside the "num" columns. This prevents confusion which can sometimes result by mistaking a hand-written letter designation for a digit. For example, a sloppy "L" written after the digit "3" might be interpreted as "31" during a hectic approach into an airport. Allowing only letters inside the gray areas can prevent a misread.

Runway surface types are also written in grayed areas located in the length (len) column. These are one-letter abbreviations. Surface type is a non-critical bit of information, but easy enough to record.

The only other area of section-1 that will be used during this example trip is the space for takeoff and taxi information located in the lower, left corner. This data will be recorded later when Ground is contacted and we request taxi and takeoff instructions. For now, let's continue flight planning by recording all the information pertaining to the arrival airport. This will use section-2.

Section 2

At right, the airport information for Jeffco is shown. The lines highlighted in color have space reserved for recording this data on the planning form. Any of the other data may also be recorded but must be written in the "remarks" area of the log.

Section-2 below was begun by recording Airport and runway information. There are also a couple of new items.

One, the ATIS frequency was written at the bottom of the

ATIS:	126.250 MHz
CTAF:	118.600 MHz
Ground:	121.700 MHz
Tower:	118.600 MHz
Departure:	126.100 MHz
Approach:	126.100 MHz
Latitude:	N39*54.53'
Longitude:	W105*07.03'
Elevation:	5670 FT

Runway	Length	Surface	ILS ID	ILS Freq	ILS Hdg
11L	8991	Asphalt			
29R	8991	Asphalt	IBJC	111.700	293
11R	6997	Asphalt			
29L	6997	Asphalt			
2	3600	Asphalt			
20	3600	Asphalt			

form since this service is available at the Jeffco airport. Two, ILS info has been added including the radio frequency, the exact heading of the ILS runway, and the frequency identifier.

Note that inside the ILS column "RW" the heading is written as 293 R. This shows at a glance that the ILS data is for runway 29R, not 29L. Where does this information come from? It

Runway	Length	Surface	ILS ID	ILS Freq	ILS Hdg
11L	8991	Asphalt			
29R	8991	Asphalt	IBJC	111.700	293
11R	6997	Asphalt			
29L	6997	Asphalt			
2	3600	Asphalt			
20	3600	Asphalt			

can be seen in the MS flight planner data table at left. The line highlighted in green contains the ILS information and is printed on the same line as the other data for runway 29R.

Also notice that the runway diagram at right has the ILS runway identified by circling the heading label. Because the VOR is also located near the runways, it was drawn in. This could be helpful information to know when getting near the Jeffco airport and deciding how best to enter the traffic pattern. Simple enhancements like these will increase the speed at which data can be interpreted in a fast-paced environment such as a cockpit in transition for landing.
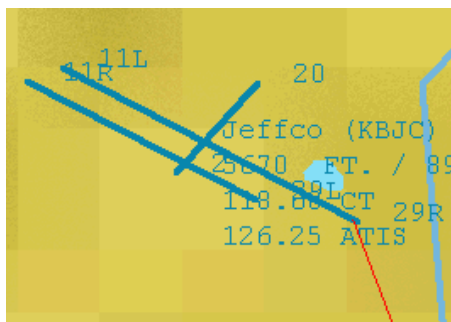
Runway layouts can be obtained from Flight Simulator's flight planner. Zooming in on an airport location like those seen on the map on page 2 will soon reveal the layout. At left, the Jeffco runway system is shown. These three lines are duplicated on the compass rose staying reasonable close to runway headings and relative lengths when making a sketch like the one above.
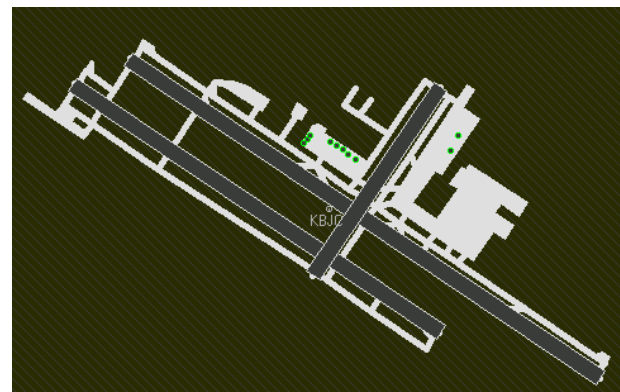
At right, FS Commander's depiction of the same runways is seen. During the 30-minutes of planning time allowed with their demo, all necessary data for the flight plan log can be gathered. As you can see, this software shows the airport in greater detail and includes taxi ramps and parking spaces (green dots). Details such as these provide a good idea of how to exit the runway after landing because you will have a general idea of where to park the aircraft. For example, if you were instructed to land on either runway 29L or 29R, you would exit to the right because all available parking lies in that direction. How many times have you exited a runway only to find the magenta line lies behind your aircraft?

Waypoints

WP Type	HDG	NM	ALT	FREQ	ID	ETE		
1.								
2. AP		27					Left- 3nm, 1RW 5800' concrete	
3. AP		47					Left- 4nm, 2RW 1800 grass	
4. VOR-DME	333	69	10000	115.40	BJC	32	Located west end of airport	
6.								

At left, three waypoints have been entered. The first two are not technically waypoints, but who cares. They are navigational reference points located near the expected track and will double check my position as the leg is flown. In the remarks, a brief description of these two items is noted.

I should see the first AP off my left wing about 3 nautical miles or so. I expect to be abeam that location 27 miles after takeoff (42 miles from Jeffco according to the VOR distance).The waypoint can be identified because it has one concrete runway over a mile in length. The second airport is also off my port side a few miles. It has two short grass strips. When my distance to Jeffco, according to the VOR, reads 22 NM, the airport should be outside my side window. Any information to help keep and verify your course should be considered a VFR WP.

The last waypoint is the VOR-DME located at the Jeffco airport. From Colorado Springs Muni, this distance is 69 NM. The primary navigation radio will be tuned to the ILS frequency of 111.70 and the secondary nav radio to 115.40. The autopilot will be set to an altitude of 10000-feet and a heading of 333-degrees. Shortly after takeoff, the aircraft will be turned to this initial course. Heading corrections may be needed should wind drift become a factor, but this is just normal pilotage.

Crank and Creak

Now that planning is completed, it's time to fire up the engine and put the information to good use. The next log entry will be taxi and takeoff instructions. Ground was notified of our intentions and their response is shown at right.

Cessna N9COF, taxi to and hold short of runway 35L via taxiway B B4 D C C7. Contact tower on 119.9 when ready.

Taxi & Takeoff Info

This information was recorded (red) in the T.O. area of section-1 as shown at left. The Hold RW data is entered first. Then the taxiways are written as they are given. Finally, the tower frequency is recorded. Notice that these entries follow the same sequence as given by Ground Control.

The aircraft was taxied as instructed. After receiving takeoff clearance, the flight to Jeffco was begun. During the trip, the data recorded inside Waypoints was used to keep the aircraft on track. This included monitoring the VOR and outside landmarks.

Landing: Enter: **L R S**	Leg:		Runway #:		Altimeter:
	name:		country:	code:	
AIRPORT	Colorado Springs Muni		USA	KCOS	
WP Type	HDG	NM	ALT	FREQ	ID	ETE
1.						
2.						
3.						
4.						
5.						
T.O.: Hold RW: **35L**			Tower: **119.9**		VFR
Taxiway **B- B4- D- C- C7**		ATIS:		IFR Depart

After arriving in the vicinity of our destination, Jeffco tower was contacted and notified of our landing intentions. They issued the instruction at right.

Landing info

Cessna N9COF, Jeffco Tower. Fly straight in, runway 29L. Altimeter 2992.

The important items were recorded as they were issued. First, we were instructed to enter "straight in". On the log, the "S" was circled. The "Leg" item is left empty since no pattern legs will be flown for the straight-in approach. Our runway is identified as 29L and the current altimeter is 29.92.

Landing: Enter: **L R S**	Leg:	Runway #: **29L**	Altimeter: **29.92**
	name:	country:	code:		Freq
AIRPORT	Jeffco	USA	KBJC	ILS	**111.70**

Instructions will often be given to enter Left (L) or Right (R). These instructions define the flow of traffic around the airport. In this case, you will also be instructed which leg to enter initially as you join the other traffic. This may be a statement such as, "Enter Base", or, "Enter traffic". The latter means downwind. Using abbreviations like (B) or (DW) are quick and easy.

After landing at Jeffco and exiting the runway, instruction were received from the tower to contact Ground. This was done and a request for parking was made. They issued the instructions at right.

Cessna N9COF, taxi to general aviation parking using taxiway G A16 A A12.

Parking info

At left, the Parking area of the log was filled in with the information as it was issued. Our parking area is general aviation so the GA letters were circled. Had we requested gate parking, then that info would have been written in the "Gate #" column.

Parking: **GA** - Gate #:	Taxiway: **G- A16- A- A12**	RW

If you will look closely at the Parking area of the log, you will see a "RW" column. (T.O. area has a similar column). Sometimes taxi instructions include traversing down a runway. If so, then the runway number can be written below the small "RW" to distinguish it from a taxiway.

Controlled airspaces encountered on a leg of a cross-country can be recorded in the waypoint and remarks area of a section. In this example flight, that section would be the one containing the arrival airport (Jeffco) information.

At left, a Class B Airspace covering the Denver airports will be entered during the trip to Jeffco. The following is a copy from MSFS describing the Bravo class of airspace.

Class B (Bravo)

Includes controlled airspace from the surface to 10,000 feet (3,048 meters) MSL surrounding the busiest airports. Class B airspace volumes are individually tailored, but usually include airspace within 30 miles of the primary airport. To operate in real-world Class B airspace, pilots must meet certain requirements for certification, weather conditions, and aircraft equipment, although you don't need to worry about these factors in Flight Simulator. You're required to contact and receive a clearance from ATC prior to entering Class B airspace in the real world. If you take off from within Class B or Class C airspace in Flight Simulator, ATC behaves as though **Flight Following** service is automatic, meaning that ATC will handle your flight until you're out of the Class B or Class C airspace.

This airspace will be encountered 33 NM after takeoff. This point is inside the black circle. If you are following airspace procedures, a call can be made and clearance obtained before you enter the space. To remind you of this fact, a notation can be made on the flight planning log. It would look similar to the data shown below in red. It is placed between the two waypoints that lie on either side of the airspace entry point. It

WP Type	HDG	NM	ALT	FREQ	ID	ETE	
1.							
2. AP		27					Left- 3nm, 1RW 5800' concrete
3. ——		33					Denver Class B, 10K- 12K
4. AP		47					Left- 4nm, 2RW 1800 grass
5. VOR-DME	333	69	10000	115.40	BJC	32	Located west end of airport
T.O.: Hold RW.		69	Tower:		VFR	32	RW Hldg: Climb Alt

will be up to you to know the requirements of the various airspaces. These can vary country by country.

We have completed the first leg of our journey. Next, an IFR leg will be planned and flown. The trip will originate at our current location, Jeffco airport, and proceed to the southwestern city of Albuquerque, New Mexico. For this trip, the third section of the flight planning log will be used. Also, a switch to the Lear 45 was made because this flight is over four times the length of the first and I want to keep flying time to about an hour.

Jeffco -> Albuquerque Intl Sunport
Distance: 306.9 nm
Estimated fuel burn: 114.2 gal / 764.7 pounds
Estimated time en route: 1:01

Waypoints	Route	Alt (ft)	Hdg	Distance	GS (kts)	Fuel	Time off
				Leg		505.9	0:00
KBJC				Rem	Est	Est	ETE
				306.9	Act	Act	ATE
BJC (115.40)	-D->	6397	280	1.8	300	0.6	0:00
				305.1			
ALS (113.90)	-D->	20000	180	157.0	300	57.9	0:31
				148.1			
TAS (117.60)	-D->	20000	174	44.6	297	16.6	0:09
				103.4			
SAF (110.60)	-D->	20000	175	64.5	296	24.0	0:13
				38.9			
KABQ	-D->	5355	209	38.9	288	14.9	0:08
				0.0			

IFR flight planning, section 3

At left, the navigation log prepared by the default flight planner is shown. The IFR route chosen was from VOR to VOR. It uses four omni stations along the way including the one (BJC) located at Jeffco itself. This log shows an estimated time enroute of 1:01 hours.

Speaking of time; if you look at the bottom of a printed flight plan sheet you will see this speed formula:

Time(min)= Dist(NM) / GndSpd(kts) x 60

It's helpful when you need a quick ETE calculation.

The map at right shows the intended route. While the FS planner does not cover a large square mile area when viewing at a high level of detail as seen here, it is the only planner that provides a realistic indication of terrain. To show the entire flight with this amount of detail, four screen captures were made and pasted together.


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Albuquerque Intl Sunport (KABQ)

ATIS:                118.000 MHz
Clearance Delivery:  119.200 MHz
Ground:              121.900 MHz
Tower:               118.300 MHz
Tower:               120.300 MHz
Departure:           123.900 MHz
Departure:           124.400 MHz
Departure:           127.400 MHz
Departure:           134.800 MHz
Approach:            123.900 MHz
Approach:            124.400 MHz
Approach:            126.300 MHz
Approach:            127.400 MHz
Approach:            134.800 MHz
FSS:                 122.550 MHz
UNICOM:              122.950 MHz

Latitude:            N35*02.41'
Longitude:           W106*36.55'
Elevation:           5355 FT

Runway  Length  Surface   ILS ID  ILS Freq  ILS Hdg
8       13774   Concrete  ISPT    111.900   080
26      13774   Concrete
3       10001   Concrete  IBZY    111.500   034
21      10001   Concrete
17      10013   Asphalt
35      10013   Asphalt
12      5998    Asphalt
30      5998    Asphalt
```

Above, the airport information for Albuquerque is listed. As you can see, there are radio frequencies out the gazoo. There are four runways, each capable of handling a Lear jet. Two of the runways have ILS service. The approaches to those are from the west or the southwest. Did you realize that the elevation of Albuquerque is nearly as high as Denver?
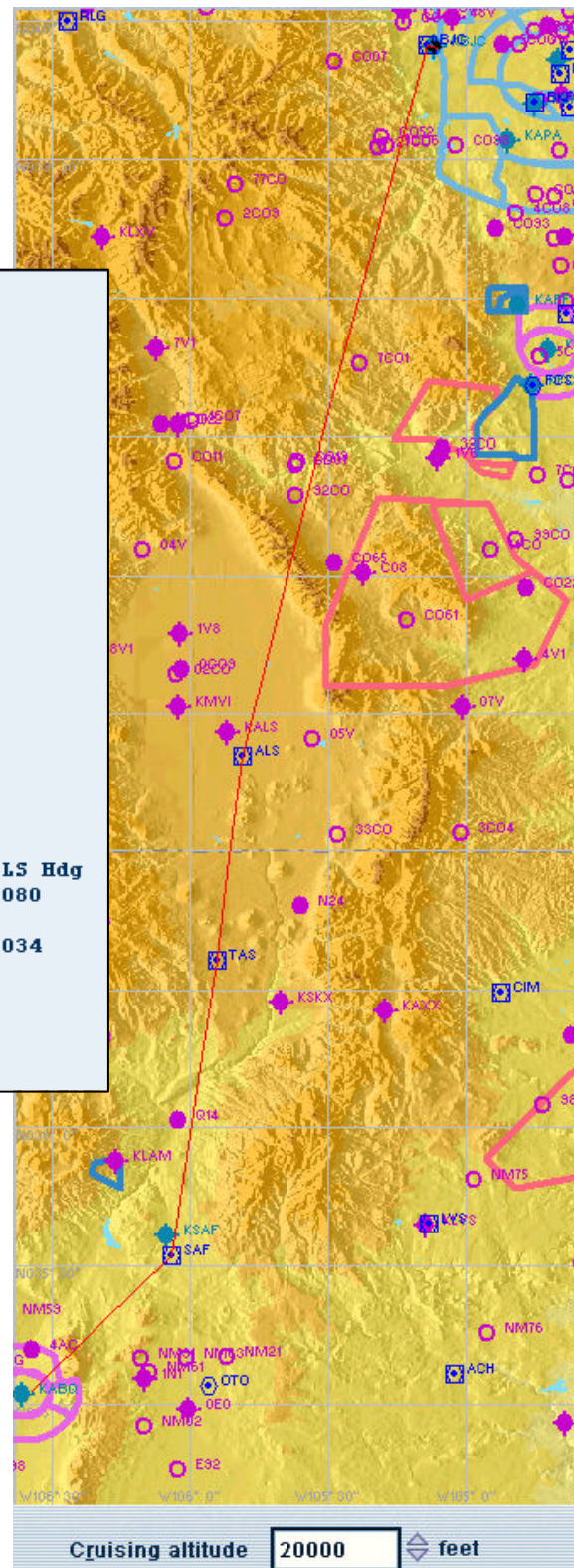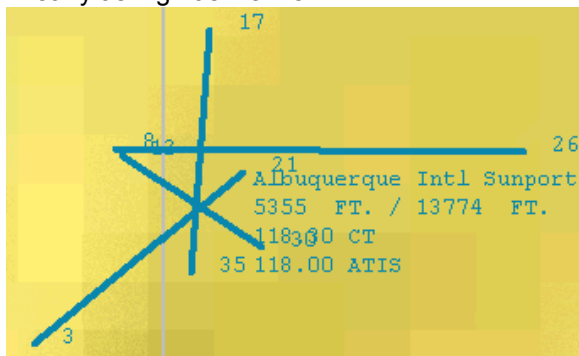
The layout of the four runways is illustrated at left. These will be duplicated onto the planning log just as the runways at Colorado Springs and Jeffco were sketched.

Below, a partial section-2 and section-3 are shown. The red rectangle in the second section will be filled in when we are ready to receive IFR clearance and IFR taxi instructions. The "IFR" has been circled to identify the flight rules in effect for this part of our trip. We will return to this area a bit later. For now, let's organize all the information gathered from the flight planner and record it into the appropriate areas of the third section.

Albuquerque has four runways. The info for the fourth was placed below the first three inside the remarks area. The diagram of the runway layout has two circled ILS runway designations, 08 and 03. This airport also has a nearby NDB. The data for this aid was placed in the remarks area. Had there been room inside Waypoints, the information could have been written there. Both NDB and Marker information are very helpful and should be recorded in an area, either waypoints or remarks.

Other than this, there is no other new information. What may be new is how the data in section-2 melds with the data in section-3 as the cross-country trip proceeds from airport to airport. Information-wise, we will taxi and takeoff in section two, but navigate, land, and park in section three. This process could continue indefinitely section by section.

IFR takeoff clearance

At left, the radio log shows the first three conversations with ATC. The log reads from bottom to top. The first item requested was the IFR clearance. As these instructions were received, they were recorded in the IFR clearance area of section-2. "Fly runway heading" is not known at this point. That space can be left blank or filled in shortly when taxi/takeoff instructions are given identifying the takeoff runway.

The IFR clearance data was written as seen at left. Ground was then contacted for taxi and takeoff instructions. Their response can be seen at the top of the radio log above. This info was written into the "T.O. area below. Now that the runway heading is known, it can be placed with the other IFR instructions.

With all clearances obtained and recorded, taxiing can begin. Radios will be set to the ATC frequencies and the autopilot will be set to an altitude of 14000-feet and a heading of 290-degrees, the runway heading.

IFR landing clearance

After arriving in the Albuquerque area, ATC issued the instructions seen in the radio log at right. Again, this data is read from bottom to top. The communication highlighted in yellow contains the initial landing information.

> Learjet N45LR, taxi to gate Golf2 via taxiway F1 G1 E3 A3 A.

> Learjet N45LR, Albuquerque Tower. Make straight in, runway 3. Altimeter 2992.

> Learjet 5LR, you are 22 miles southwest. Turn left heading 065, Climb and maintain 7,400 Cleared ILS runway 3 approach. Maintain 7,400 until established on the localizer. Contact Albuquerque Tower on 120.3.

From this bit of dialog, the landing runway becomes known, ILS runway 03. A quick glance at the planning log shows the frequency for this ILS is 111.50. This would be set into the radio so that the APP function of the autopilot could be used to establish the

ILS	Freq	RW	ID	RW		num.	08	26	elev.	len.	13 774	C
	111.90	080	ISPT		1.							
	111.50	034	IBZY		2.	num.	03	21		len.	10 001	C
					3.	num.	17	35	5355	len.	10 013	A

Lear on the localizer. From the log, I can also refresh my memory concerning the elevation of this airport and can see that the assigned runway is a comfortable 10000-feet long.

The second bit of information on the radio log above is the straight-in landing clearance into runway 03. This data is recorded as seen here in red.

Landing:	Enter: L R Ⓢ	Leg:	Runway #: 03	Altimeter: 29.92	
AIRPORT	name: Albuquerque Intl	country: USA	code: KABQ	ILS	Freq 111.90

And finally, after landing and exiting the runway, a request to gate parking was made. The response is seen highlighted in green at the top of the radio log. This data was recorded in the Parking columns of Section-3.

Parking:	GA - Gate #: G-2	Taxiway: F1- G1- E3- A3- A

All three sections of this cross-country are shown below in their entirety. This planning log has evolved to suit a particular style of flying with Flight Simulator. Your needs may be different and the log could be used as a basis for further modification.

Landing:	Enter: L R S	Leg:	Runway #:		Altimeter:		Parking:	GA - Gate #:		Taxiway:					RW		
AIRPORT	name: Colorado Springs Muni		country: USA		code: KCOS	ILS	Freq	RW	ID		1. num. 17 L 35 R	elev.	len. 13 515 C				
WP Type	HDG	NM	ALT	FREQ	ID	ETE				RW	2. num. 17 R 35 L		len. 11 029 A				
1.											3. num. 12 30	6184	len. 8 266 A				
2.																	
3.																	
4.																	
5.																	
T.O.: Hold RW: 35L		Tower: 119.9		VFR		RW Hdg:	Climb Alt:										
Taxiway B- B4- D- C- C7		ATIS:		IFR	Depart freq:		Xpondr:										

Landing:	Enter: L R Ⓢ	Leg:	Runway #: 29L		Altimeter: 29.92		Parking:	ⓖA - Gate #:		Taxiway: G- A16- A- A12					RW		
AIRPORT	name: Jeffco		country: USA		code: KBJC	ILS	Freq 111.70	RW 293 R	ID IBJC	RW	1. num. 11 L 29 R	elev.	len. 8 991 A				
WP Type	HDG	NM	ALT	FREQ	ID	ETE					2. num. 11 R 29 L		len. 6 997 A				
1.											3. num. 2 20	5670	len. 3 600 A				
2. AP		27					Left- 3nm, 1RW 5800' concrete										
3. ▬		33					Denver Class B, 10K- 12K										
4. AP		47					Left- 4nm, 2RW 1800 grass										
5. VOR-DME	333	69	10000	115.40	BJC	32	Located west end of airport										
T.O.: Hold RW: 29R	69	Tower: 118.60		VFR	32	RW Hdg: 290 Climb Alt: 14 000											
Taxiway C- A- A1		ATIS: 126.25		ⓘFR	Depart freq: 126.10	Xpondr: 1273											

Landing:	Enter: L R Ⓢ	Leg:	Runway #: 03		Altimeter: 29.92		Parking:	GA - Gate #: G-2		Taxiway: F1- G1- E3- A3- A					RW		
AIRPORT	name: Albuquerque Intl		country: USA		code: KABQ	ILS	Freq 111.90	RW 080	ID ISPT	RW	1. num. 08 26	elev.	len. 13 774 C				
WP Type	HDG	NM	ALT	FREQ	ID	ETE		111.50	034	IBZY	2. num. 03 21		len. 10 001 C				
1. VOR-DME	280	2	20000	115.40	BJC	--					3. num. 17 35	5355	len. 10 013 A				
2. VOR-DME	180	157		113.90	ALS	+32					12 30		5 998 A				
3. VOR-DME	174	45		117.60	TAS	+09											
4. VOR-DME	175	65		110.60	SAF	+13											
5. KABQ	209	39				+08	NDB 247.0 3 NM South of AP										
T.O.: Hold RW:		307	Tower:		VFR	1+01	RW Hdg:	Climb Alt:									
Taxiway		ATIS: 118.00		IFR	Depart freq:		Xpondr:										