
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 11-K

ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

ANNUAL REPORT PURSUANT TO SECTION 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2006

Or

TRANSITION REPORT PURSUANT TO SECTION 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission file number 1-7615

KIRBY 401(k) PLAN

Kirby Corporation
55 Waugh Drive, Suite 1000
Houston, Texas 77007

KIRBY 401(k) PLAN

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Supplemental schedules, other than those listed above, are omitted because of the absence of the conditions under which they are required.

Report of Independent Registered Public Accounting Firm

Plan Administrator

Kirby 401(k) Plan:

We have audited the accompanying statements of net assets available for benefits (modified cash basis) of the Kirby 401(k) Plan (the Plan) as of December 31, 2006 and 2005 and the related statements of changes in net assets available for benefits (modified cash basis) for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As described in note 2, these financial statements and supplemental schedule were prepared on a modified cash basis of accounting, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2006 and 2005 and the changes in net assets available for benefits for the years then ended, on the basis of accounting described in note 2.

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule H, line 4i – schedule of assets (held at end of year) (modified cash basis) as of December 31, 2006 is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

KPMG LLP

Houston, Texas
June 27, 2007

KIRBY 401(k) PLAN

Statements of Net Assets Available for Benefits

(Modified Cash Basis)

December 31, 2006 and 2005

	<u>2006</u>	<u>2005</u>
Assets:		
Investments at fair value	\$ 101,430,888	75,964,993
Due from trustee	10,176,267	—
Cash, non-interest bearing	44,350	—
Accrued income	66,050	50,672
Due from broker for securities sold	<u>108,393</u>	<u>35,732</u>
Total assets	111,825,948	76,051,397
Liabilities:		
Due to broker for securities purchased	10,329,604	15,874
Net assets available for benefits	<u>\$ 101,496,344</u>	<u>76,035,523</u>

See accompanying notes to financial statements.

KIRBY 401(k) PLAN

Statements of Changes in Net Assets Available for Benefits

(Modified Cash Basis)

Years ended December 31, 2006 and 2005

	<u>2006</u>	<u>2005</u>
Additions to net assets attributed to:		
Contributions from participants	\$ 6,927,373	6,083,783
Contributions from employer	2,626,850	2,370,750
Rollover contributions	1,647,669	517,272
Interest and dividend income	1,485,939	962,163
Net appreciation in fair value of investments	<u>9,462,615</u>	<u>4,671,167</u>
Total additions	<u>22,150,446</u>	<u>14,605,135</u>
Deductions from net assets attributed to:		
Benefits paid to participants	<u>6,865,892</u>	<u>4,709,550</u>
Total deductions	<u>6,865,892</u>	<u>4,709,550</u>
Transfers to the plan from the Global Power Systems, L.L.C.		
Profit Sharing Plan (note 1)	<u>10,176,267</u>	<u>—</u>
Net increase	25,460,821	9,895,585
Net assets available for benefits, beginning of year	<u>76,035,523</u>	<u>66,139,938</u>
Net assets available for benefits, end of year	<u>\$ 101,496,344</u>	<u>76,035,523</u>

See accompanying notes to financial statements.

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(1) Description of the Plan

(a) General

The Kirby 401(k) Plan (the Plan) is a defined contribution 401(k) plan for the benefit of employees of Kirby Corporation (the Company) and certain subsidiaries. Each employee is eligible to join the Plan as of the first pay period following completion of one year of service and the attainment of age 18. Employees covered by collective bargaining agreements, the terms of which do not provide for participation in the Plan, are not eligible. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA). Further information relating to the Plan's provisions is available in the Plan Document.

The Hollywood Marine, Inc. (HMI) 401(k) Plan (HMI Plan) was merged into the Plan, and all HMI balances were transferred to the Plan effective December 31, 1999. Commencing January 1, 2000, former HMI Plan participants are subject to the same plan provisions as the Plan participants. In connection with the plan merger, the Plan was amended on December 31, 1999 to include HMI employees.

The Global Power Systems, L.L.C. (GPS) Profit Sharing Plan (GPS Plan) was merged into the Plan, and all GPS balances were transferred to the Plan effective December 31, 2006. Commencing January 1, 2007, former GPS Plan participants are subject to the same plan provisions as the Plan participants. In connection with the plan merger, the Plan was amended on December 31, 2006 to include GPS employees.

(b) Plan Administration

The general administration of the Plan is the responsibility of the Company (the plan administrator). The plan administrator has broad powers regarding the operation and administration of the Plan and receives no compensation for service to the Plan. All administrative expenses, unless paid by the Company at its discretion, are paid by the Plan. During 2006 and 2005, all expenses were paid by the Company. Wells Fargo Bank (Wells) is the trustee of the Plan.

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(c) Contributions

The Plan provides for basic employee pretax contributions to the Plan of up to 3% of covered compensation as defined, and for additional employee pretax contributions to the Plan of up to 14% of covered compensation subject to the provisions of the Internal Revenue Code of 1986, as amended (the Code). Participants age 50 or older during the Plan year may also elect to make a “catch-up” contribution, subject to certain Internal Revenue Service (IRS) limits (\$5,000 in 2006 and \$4,000 in 2005). The Company contributes matching employer contributions equal to 100% of basic employee pretax contributions. The Company does not match the additional employee pretax or catch-up contributions. Matching employer contributions were used to purchase Company common stock during 2005 and 2006 but employees were able to transfer the matching employer contributions to other funds upon receipt. Effective January 1, 2007, each participant has the right to direct his or her contributions and the Company’s matching contributions, between the investment funds offered by the Plan, including Company common stock.

Effective April 1, 2005, all employees hired or rehired after April 1, 2005 will be automatically enrolled at a 3% pretax contribution rate, unless otherwise elected by the participant.

In addition, participants may contribute amounts representing rollovers from other qualified plans or from an individual retirement account.

(d) Benefits Payments and Loans

Benefits payments are made to participants upon retirement or termination of employment (or to the beneficiary in the event of death) and are in the form of lump sum distribution payments. A participant may request a loan for up to the lesser of 50% of the participant’s vested interest or \$50,000, less the participant’s highest outstanding loan balance during the preceding 12 months. Loans are typically repaid over a five-year period and bear interest at prime rate plus 1%. Interest rates ranged from 5% to 9.25% at December 31, 2006. Loans outstanding at December 31, 2006 mature from January 3, 2007 through December 31, 2011. Loans outstanding upon a participant’s termination of employment are considered deemed distributions if not repaid and are deducted from the participant’s account balance prior to distribution. These amounts are taxed to the participant in the year of the participant’s termination. Former participants of the HMI Plan are eligible to receive in service withdrawals from their vested HMI account balance after attaining 59 ½ years of age.

Effective March 28, 2005, the Plan requires automatic distribution of participant accounts upon termination without the participants consent of amounts less than \$5,000 and greater than \$1,000. If the participant does not elect to have the amount paid directly to an eligible retirement plan or receive a distribution directly, then the Plan will pay the distribution to an individual retirement plan designated by the Plan administrator.

Amounts less than \$1,000 will continue to be paid directly to participants upon termination.

Effective October 14, 2005, the Plan was amended to include certain provisions of the Katrina Emergency Tax Relief Act of 2005.

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(e) Vesting

Participants are 100% vested in their participant contributions and rollovers, if any. Participants, excluding former GPS plan participants, in the Plan have an immediate and fully vested interest in the portion of the account relating to employer contributions and may, upon resignation from or discharge by the employer, withdraw their entire account balance.

Employer contributions made to the prior HMI Plan are subject to a five-year vesting schedule based on the participant's HMI service date. Forfeitures of nonvested participants are credited to the accounts of former HMI Plan participants employed at year-end based on a formula that considers the total compensation, as defined, of all former HMI Plan participants for that plan year. Forfeitures in the amount of \$44,350 and \$54,543 as of December 31, 2006 and 2005, respectively, were available for allocation to former HMI Plan participants. As of December 31, 2006, all participants are 100% vested.

Employer contributions made to the prior GPS Plan are subject to a three-year vesting schedule based on the participant's GPS service date. Forfeitures of nonvested participants are credited to the accounts of former GPS Plan participants employed at year-end based on a formula that considers the total compensation, as defined, of all former GPS Plan participants for that plan year.

Effective January 1, 2007, employer contributions to former GPS Plan participants will be subject to the same vesting schedule as Kirby participants.

(f) Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to terminate the Plan subject to the provisions of ERISA. In the event of termination, the amounts credited to the accounts of participants will be distributed to the participants after payment of expenses for distribution and liquidation.

(g) Valuation of Participant Accounts

Under the Plan, each participant's account is credited with the participant's contribution, the Company's matching contribution and an allocation of investment income (loss), net of administrative expenses. Investment income (loss) is allocated daily to participants. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

(Continued)

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying financial statements have been prepared on the modified cash basis, which is a comprehensive basis of accounting other than U.S. generally accepted accounting principles, and is an acceptable method of reporting under Department of Labor regulations. The modified cash basis of accounting utilizes the cash basis of accounting while carrying investments at fair value and recording investment income (loss) on the accrual basis. Consequently, contributions are recognized when received rather than when earned, and expenses are recognized when paid rather than when the obligation is incurred. As of December 31, 2006, \$121,377 of employee contributions and \$48,415 of employer contributions for the 2006 Plan year had not been remitted to the trust. As of December 31, 2005, \$106,692 of employee contributions and \$47,250 of employer contributions for the 2005 Plan year had not been remitted to the trust. As of December 31, 2006 and 2005, \$82,619 and \$79,376, respectively, of excess deferrals were held by the trust and distributed to participants subsequent to year end. As of December 31, 2006 and 2005, \$40,753 and \$60,892, respectively, of participant loan balances were in default and deemed distributed subsequent to year end. Under U.S. generally accepted accounting principles, these amounts would have been reflected as accounts receivable, accounts payable, and a reduction of outstanding participant loans, respectively.

(b) Use of Estimates

The preparation of financial statements requires Plan management to make estimates and assumptions that affect the reported amounts of assets, liabilities, and disclosure of contingent assets and liabilities, and changes therein. Actual results could differ from those estimates.

(c) Investment Valuation

Investments in mutual funds and Company common stock are stated at fair value based on quoted market prices. Investments in common trust funds are stated at fair market value based upon quoted market prices of the underlying assets. Purchases and sales of investments are recorded on a trade date basis. Net appreciation (depreciation) in fair value of investments includes realized gains and losses on investments sold during the year as well as net appreciation (depreciation) of the investments held at the end of the year. Participant loans are stated at cost, which approximates their fair value. Interest and dividend income is accrued in the period earned.

(d) Payment of Benefits

Payments to participants are recorded as the benefits are paid.

(Continued)

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(3) Investments

Each participant has the right to direct his or her contributions and the Company's matching contributions once remitted, between the investment funds offered by the Plan. Descriptions of the Plan's investment fund options are included in the summary plan description provided to all eligible employees.

Participants may direct their investment contributions to the following investment funds: Wells Fargo Outlook 2010 Fund, Wells Fargo Outlook 2020 Fund, Wells Fargo Outlook 2030 Fund, Wells Fargo Outlook 2040 Fund, Wells Fargo Treasury Plus Institutional Money Market Fund, Dreyfus Intermediate Term Income Fund, Goldman Sachs Capital Growth Fund, Vanguard 500 Index Fund, AIM Constellation Fund, Franklin US Government Securities Fund, Templeton Foreign Fund, Lord Abbett All Value Fund, Fidelity Advisor Mid Cap Fund, American Funds Growth Fund of America and Kirby Common Stock Fund.

The Wells Fargo Outlook 2020 Fund and Vanguard 500 Index Fund were added during 2006. Effective July 19, 2006, all funds in the Wells Fargo Asset Allocation Fund were transferred to the Wells Fargo Outlook 2020 Fund and all funds in the Wells Fargo S&P 500 Index Fund were transferred to the Vanguard 500 Index Fund.

The following presents investments that represent 5% or more of the Plan's net assets as of December 31:

2006:

Wells Fargo Treasury Plus Institutional Money Market Fund	\$	13,943,242
Wells Fargo Outlook 2020 Fund		8,869,154
Dreyfus Intermediate Term Income Fund		5,273,075
Goldman Sachs Capital Growth Fund		5,483,910
Templeton Foreign Fund		6,226,813
American Funds Growth Fund of America		6,218,539
Company common stock		27,540,589
Participant loans		6,568,258

2005:

Wells Fargo Treasury Plus Institutional Money Market Fund	\$	9,875,971
Wells Fargo Asset Allocation Fund		6,500,970
Dreyfus Intermediate Term Income Fund		4,683,781
Goldman Sachs Capital Growth Fund		5,225,043
AIM Constellation Fund		4,758,462
American Funds Growth Fund of America		4,002,528
Company common stock		18,961,343
Participant loans		6,015,684

(Continued)

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

The Plan's investments (including realized gains and losses on investments bought and sold, as well as unrealized gains and losses on investments held during the year) appreciated in value as follows:

	<u>2006</u>	<u>2005</u>
Common trust funds	\$ 73,611	447,982
Mutual funds	3,698,223	1,381,716
Common stock	5,690,781	2,841,469
	<u>\$ 9,462,615</u>	<u>4,671,167</u>

(4) Concentration of Investments

The Plan's investment in shares of Kirby Corporation common stock represents 25% and 25% of total assets as of December 31, 2006 and 2005 respectively. Kirby Corporation is engaged in marine transportation and diesel engine services.

(5) Voting Rights

Each shareholder is entitled to exercise voting rights attributable to the shares of Company common stock allocated to his or her account and is notified by the trustee prior to the time that such rights are to be exercised. The trustee is not permitted to vote any shares for which instructions have not been given by the participant. During 2006 and 2005, the Plan purchased all shares of Company common stock in the open market.

(6) Risk and Uncertainties

The Plan may invest in common trust funds, mutual funds and Company common stock. Investment securities are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is probable that changes in the value of investment securities will occur in the near term.

(7) Related Party Transactions

Certain Plan investment options include shares of Company common stock, common trust funds and mutual funds managed by Wells. The Company is the plan sponsor, and Wells is the trustee as defined by the Plan. Therefore, these transactions qualify as party-in-interest transactions. These transactions are covered by an exemption from the "prohibited transaction" provisions of ERISA and the Code.

The Plan has participant loans outstanding, which are secured solely by a portion of the participant's vested account balance, in accordance with the Plan Document.

(Continued)

KIRBY 401(K) PLAN

Notes to Financial Statements

(Modified Cash Basis)

December 31, 2006 and 2005

(8) Federal Income Taxes

Management considers the Plan to be in compliance with Section 401(a) of the Code and, accordingly, to be entitled to an exemption from federal income taxes under the provisions of Section 501(a). A letter dated August 30, 2001 has been received by Wells stating that the form of the prototype plan is acceptable under the Code Section 401 for use by employers for the benefit of their employees. The letter, in effect, states that an employer who adopts the Plan will be considered to be qualified under the Code Section 401(a) provided all terms of the Plan are met and the Plan does not discriminate in favor of key or highly compensated employees. Therefore, the plan administrator believes the Plan was qualified and the related trust was tax exempt as of December 31, 2006 and 2005.

(Continued)

KIRBY 401(k) PLAN

Schedule H, Line 4i – Schedule of Assets (Held at End of Year)

(Modified Cash Basis)

December 31, 2006

Identity of issue, borrower, lessor, or similar party	Description of asset	Current value
Common trust funds:		
*Wells Fargo Bank	Wells Fargo Treasury Plus Institutional Money Market Fund	\$ 13,943,242
*Wells Fargo Bank	Wells Fargo Short-Term Investment Fund	919,073
Total common trust funds		<u>14,862,315</u>
Mutual funds:		
*Wells Fargo Bank	Wells Fargo Outlook 2010 Fund	918,174
*Wells Fargo Bank	Wells Fargo Outlook 2020 Fund	8,869,154
*Wells Fargo Bank	Wells Fargo Outlook 2030 Fund	741,111
*Wells Fargo Bank	Wells Fargo Outlook 2040 Fund	802,645
Dreyfus	Dreyfus Intermediate Term Income Fund	5,273,075
The Goldman Sachs Group	Goldman Sachs Capital Growth Fund	5,483,910
Vanguard	Vanguard 500 Index Fund	4,638,656
AIM Investments	AIM Constellation Fund	4,790,483
Franklin Templeton	Franklin US Government Securities Fund	953,714
Franklin Templeton	Templeton Foreign Fund	6,226,813
Lord Abbett	Lord Abbett All Value Fund	3,450,273
Fidelity Advisor	Fidelity Advisor Mid Cap Fund	4,093,179
American Funds	American Funds Growth Fund of America	6,218,539
Total mutual funds		<u>52,459,726</u>
Common stock:		
*Kirby Corporation	Common stock	27,540,589
*Participant loans	Interest rates ranging from 5% to 9.25% and maturity dates from 01/03/2007 to 12/31/2011	6,568,258
Total assets (held at end of year)		<u>\$ 101,430,888</u>

*Parties in interest to the Plan.

See accompanying report of independent registered public accounting firm.

EXHIBIT INDEX

The following documents are filed as part of this report.

Exhibit number	Description
23	Consent of Independent Registered Public Accounting Firm

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Plan administrator, which administers the Plan, has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

Kirby 401(k) Plan

June 27, 2007

BY: /s/Jack M. Sims
JACK M. SIMS
Vice President
Human Resources of
Kirby Corporation

Consent of Independent Registered Public Accounting Firm

Plan Administrator
Kirby 401(k) Plan:

We consent to the incorporation by reference in the Registration Statements (File Nos. 333-129333, 33-57625) on Form S-8 of Kirby Corporation of our report dated June 27, 2007, with respect to the statements of net assets available for benefits (modified cash basis) of the Kirby 401(k) Plan as of December 31, 2006 and 2005, and the related statements of changes in net assets available for benefits (modified cash basis) for the years then ended and the supplemental schedule H, line 4i – schedule of assets (held at end of year) (modified cash basis) as of December 31, 2006, which report appears in the December 31, 2006 Annual Report of Form 11-K of the Kirby 401(k) Plan.

KPMG LLP

Houston, Texas
June 27, 2007
